

# Contents to Volume 61

January 1, Number 1

## Editorial

- 1 Message from the Editor-in-Chief, Frank J. Rauscher, III.

## Advances in Brief

- 2 Histone Deacetylase-targeted Treatment Restores Retinoic Acid Signaling and Differentiation in Acute Myeloid Leukemia. Fabiana F. Ferrara, Francesco Farf, Andrea Bianchini, Fabrizio Padula, Vania Gelmetti, Severino Minacci, Marco Mancini, Pier Giuseppe Pellicci, Francesco Lo Coco, and Clara Nervi.
- 8 Evidence for the Development of p53 Mutations after Cytotoxic Therapy in a Neuroblastoma Cell Line. Deborah A. Twissie, Archie J. Malcolm, Nick Brown, Andrew D. J. Pearson, and John Luncey.
- 14 Usefulness of Repeated Direct Intratumoral Gene Transfer Using Hemagglutinating Virus of Japan-Liposome Method for Cytosine Deaminase Suicide Gene Therapy. Hiroki Kanyama, Naohiro Tomita, Tomoko Yamano, Tomohiko Aihara, Yasuo Miyoshi, Masayuki Ohue, Mitsugu Sekimoto, Isao Sakita, Yasuhiro Tamaki, Yasufumi Kameda, Peter D. Senter, and Morito Monden.
- 19 More Frequent p-Catenin Exon 3 Mutations in Gallbladder Adenomas Than in Carcinomas Indicate Different Lineages. Nobuyuki Yangiwa, Tetsu Mikami, Makoto Sugita, and Isao Okayasu.
- 23 Alterations of the Double-Strand Break Repair Gene *MRE11* in Cancer. Toshihiko Fukuda, Tatsuki Sumiyoshi, Mamoru Takahashi, Tsuyoshi Katohika, Toshimasa Asahara, Hiroki Inui, Masahito Watanai, Masayuki Yasutomi, Natsuo Kamada, and Kiyoshi Miyagawa.
- 27 Lack of Telomerase RNA Gene *hTERC* Expression in Alternative Lengthening of Telomeres Cells Is Associated with Methylation of the *hTERC* Promoter. Stacey F. Hoare, Lisa A. Bryce, G. Bea A. Wisman, Sharon Burns, James J. Goings, Ate G. J. van der Zee, and W. Nicol Keith.
- 33 Specific p53 Mutations Detected in Plasma and Tumors of Hepatocellular Carcinoma Patients by Electrospray Ionization Mass Spectrometry. Peter A. Jackson, Geng-Sun Qian, Martin D. Friesen, Yuan-Rong Zhu, Peixin Lu, Jin-Bing Wang, Yiqun Wu, Thomas W. Kensler, Bert Vogelstein, and John D. Groopman.
- 36 Frameshift Mutations at Coding Mononucleotide Repeats of the *BRAD50* Gene in Gastrointestinal Cancers with Microsatellite Instability. Nam-Gyun Kim, Yun Rak Choi, Myung Jin Baek, Yun Hee Kim, Hyeonung Kang, Nam Kyu Kim, Jun Suk Min, and Hyeon Kim.
- 39 Vascular Endothelial Growth Factor Receptor-2-blocking Antibody Potentiates Radiation-induced Long-Term Control of Human Tumor Xenografts. Sergey V. Kozin, Yves Boucher, Daniel J. Hicklin, Peter Bollen, Rakesh K. Jain, and Herman D. Suit.
- 45 Tumor Progression Is Associated with a Significant Decrease in the Expression of the Endostatin Precursor Collagen XVIII in Human Hepatocellular Carcinomas. Orlando Messor, Marco Reale, Nathalie Théret, Bruno Turin, Paulette Bouda-Sage, Dominique Lottin, Jean-Pierre Campion, Taina Pihlajaniemi, and Bruno Clément.
- 50 Highly Efficient Telomerase-induced Tumor Frequency in Isolated Chinese Hamster Cell Lines Defective in Nucleotide Excision Repair and Mismatch Repair Proteins. Ken-ichiro Nara, Fumio Nagashima, and Akira Yano.
- 53 Topoisomerase I-mediated Cytotoxicity of N-Methyl-N'-nitro-N-nitrosoguanidine: Trapping of Topoisomerase I by the  $\alpha^2$ -Methylguanine. Philippe Pourquier, Jessica L. Walman, Yoshinaka Urasaki, Natalia A. Loktionova, Anthony E. Pegg, John L. Nitiss, and Yves Pommier.
- 59 The Partial Nontandem Duplication of the *MLL (ALL 1)* Gene Is a Novel Rearrangement That Generates Three Distinct Fusion Transcripts in B-cell Acute Lymphoblastic Leukemia. Susan P. Whitman, Matthew P. Strout, Guido Marcucci, Alan G. Freud, Lucia L. Colley, Nancy J. Zelenik-Lé, Krzysztof Mrózek, Karl S. Theil, Ursula R. Kees, Clara D. Bloomfield, and Michael A. Caligiuri.
- 64 Human Homologue of Yeast Rad23 Protein A Interacts with p300/Cyclic AMP-responsive Element Binding (CREB)-binding Protein to Down-regulate Transcriptional Activity of p53. Qianzheng Zhu, Galtzar Wani, Manzor A. Wani, and Altaf A. Wani.
- 71 Intact Nitric Oxide Synthase II Gene Is Required for Interferon- $\beta$ -mediated Suppression of Growth and Metastasis of Pancreatic Adenocarcinoma. Baoliang Wang, Qinghua Xiong, Qian Shi, Xiangdong Le, James L. Abbruzzese, and Keping Xie.
- 76 Proteomic Analysis Reveals that 14-3-3 $\sigma$  Is Down-regulated in Human Breast Cancer Cells. Anne-Sophie Vercouter-Ekourt, Jérôme Lemoine, Xuefen Le Bourhis, Horner Louis, Béatrice Bolly, Victor Nacombe, Françoise Revillon, Jean-Pierre Peyrat, and Hubert Hendrickx.
- 81 A Three-Dimensional and Temporo-Spatial Model to Study Invasiveness of Cancer Cells by Heregulin and Prostaglandin E<sub>2</sub>. Liisa Adam, Abhijit Mazumdar, Tushar Sharma, Terence R. Jones, and Rakesh Kumar.

## Regular Articles

### Carcinogenesis

- 88 p53 Modulates Base Excision Repair Activity in a Cell Cycle-specific Manner after Genotoxic Stress. Huzai Olf, In Zarek, Gospar Butfalvi, Marian Rehak, Ayellet Falcovitz, Michael Mihaylovsky, Naomi Goldfinger, and Varda Rotter.
- 97 Progesterone Receptor B Gene Inactivation and CpG Hypermethylation in Human Uterine Endometrial Cancer. Masahiro Sasaki, Abhipa Dharia, Bong R. Oh, Yuchiro Tanaka, Sei-ichiro Fujimoto, and Rajar Dahiya.
- 103 Protection against 2-Hydroxyamino-1-methyl-4-phenylimidazo-[4,5-b]pyridine Cytotoxicity and DNA Adduct Formation in Human Prostate by Glutathione S-Transferase P1. Chad P. Nelson, La Cress R. Kidd, Jorge Sauraguen, William B. Isaacs, Angelo M. De Marzo, John D. Groopman, William G. Nelson, and Thomas W. Kensler.

### Clinical Investigations

- 110 Synthesis and Evaluation of  $^{125}$ I-labeled Choline as an Oncologic Tracer for Positron Emission Tomography: Initial Findings in Prostate Cancer. Timothy R. DeGrado, R. Edward Coleman, Shuyan Wang, Steven W. Baldwin, Matthew D. Orr, Cary N. Robertson, Thomas J. Polascik, and David T. Price.

### Epidemiology & Prevention

- 118 (+)-Catechin Inhibits Intestinal Tumor Formation and Suppresses Focal Adhesion Kinase Activation in the *Min/+* Mouse. Michael J. Weyant, Adelaide M. Carothers, Andrew J. Dannenberg, and Monica M. Bertagnoli.
- 126 Estrogens Reduce and Withdrawal of Estrogens Increase Risk of Microsatellite Instability-positive Colon Cancer. Martha L. Slattery, John D. Potter, Karen Conner, Sandra Edwards, Khe-Ni Ma, Kristin Anderson, Donna Schaffer, and Wade S. Samowitz.

### Experimental Therapeutics

- 131 Characterization of the Antitumor Effects of the Selective Farnesyl Protein Transferase Inhibitor R115777 *in Vivo* and *in Vitro*. David W. Ead, Gerd Smets, Alison V. Todd, Tanya L. Applegate, Caroline J. Faery, Patrick Angibaud, Marc Venet, Gerard Sanz, Hervé Potgen, Stacy Skrzat, Ann Devine, Walter Wouters, and Charles Borden.
- 138 Expression of a Truncated First Exon BCR Sequence in Chronic Myelogenous Leukemia Cells Blocks Cell Growth and Induces Cell Death. Yan Wang, Jiaxin Liu, Yun Wu, Weiping Luo, Sue-Hwa Lin, Hui Lin, Natalyn Hawk, Tong Sun, Jie Qing Gao, Zeev Estrov, Moshe Talpaz, Richard Champlin, and Ralph B. Arlinghaus.
- 145 Mitochondrial Dysfunction after Aerobic Exposure to the Hypoxic Cytotoxic Tirapazamine. Brady G. Wooters, Yvette M. Delahousaye, James W. Evans, Geoffrey W. Birrell, Mary Jo Dorie, Jingli Wang, Dhara MacDermid, Roland K. Chie, and J. Martin Brown.
- 153 *In Situ* Expression of Soluble B7-1 in the Context of Oncolytic Herpes Simplex Virus Induces Potent Antitumor Immunity. Tomoki Todor, Robert L. Martuza, Margaret J. Dullman, and Samuel D. Rabkin.
- 162 Tumor Cell Vaccine Elicits Potent Antitumor Immunity after Allogeneic T-Cell-depleted Bone Marrow Transplantation. Takatori Teshima, Nicolas Mach, Geoffrey R. Hill, Luying Pan, Silke Gilleßen, Glenn Dranoff, and James L. M. Ferrara.
- 172 Simultaneous Treatment with 1- $\beta$ -D-Arabinofuranosylcytosine and Daunorubicin Induces Cross-Resistance to Both Drugs due to a Combination-specific Mechanism in HL60 Cells. Hanyuki Takemura, Yoshimasa Urasaki, Akira Yoshida, Toshihiro Fukushima, and Takao Ueda.
- 178 Induction of Differentiation of Acute Promyelocytic Leukemia Cells by a Cytidine Deaminase-resistant Analog of 1- $\beta$ -D-Arabinofuranosylcytosine, 1- $\beta$ -Deoxy-2-methylene-1- $\beta$ -D-erythro-pentafuranosylcytidine. Naoyuki Nitiss, Yuki Ishii, Akira Matsuda, and Yoshio Honma.
- 186 Adenovirus-mediated Bax Overexpression for the Induction of Therapeutic Apoptosis in Prostate Cancer. Xiaoying Li, Michela Marani, Jiang Yu, Bicheng Nan, Jack A. Roth, Shumoko Kagawa, Bingling Fang, Larry Denner, and Marco Marcelli.

### Immunology

- 192 Immunological and Viral Factors Associated with the Response of Vulval Intraepithelial Neoplasia to Photodynamic Therapy. El-Sad Abdel-Hady, Pierre Martin-Hirsch, Maggie Deguez-Ken, Peter L. Stern, James W. Moore, Gerald Corbett, Henry C. Kitchener, and Ian N. Hampson.
- 197 A Retrogen Strategy for Presentation of an Intracellular Tumor Antigen as an Exogenous Antigen by Dendritic Cells Induces Potent Antitumor T Helper and CTL Responses. Zhanyang You, Jenny Hester, Lisa Rollins, Giulio C. Spagnoli, Pierre van der Bruggen, and Si-Yi Chen.
- 206 Granulocyte/Macrophage-Colony Stimulating Factor Produced by Recombinant Avian Poxvirus Enriches the Regional Lymph Nodes with Antigen-presenting Cells and Acts as an Immunosuppressant. Erik Kass, Dennis L. Panicali, Gail Mazriza, Jeffrey Schlim, and John W. Greiner.
- 215 Persistence of Immunogenic Pulmonary Metastases in the Presence of Protective Anti-melanoma Immunity. Cherie K. Donawick, Michael W. Pridle, and Margaret L. Kripke.
- 222 Human Heat Shock Protein 70 Peptide Complexes Specifically Activate Antimelanoma T Cells. Chiara Castelli, Anne-Marie T. Crippa, Francesca Rini, Lucia Rivellini, Arabella Mazzocchi, Rolf Kiesling, and Giorgio Parmiani.
- 228 Local Administration of Dendritic Cells Inhibits Established Breast Tumor Growth: Implications for Apoptosis-inducing Agents. Kimberly A. Candlish, Koichi Shigemizu, John C. McLaughlin, Robin Kunkel, Jennifer A. Fuller, Bruce G. Redman, Elaine K. Thomas, Brian J. Nickoloff, and James J. Muller.
- 237 A Novel Role of Metalloproteinase in Cancer-mediated Immunosuppression. Bo-Ching Shu, Shu-Ming Hsu, Hong-Neng Ho, Huang-Chun Lien, Su-Cheng Huang, and Rong-Hwa Lin.
- 243 The Chemotherapeutic Drug 5-Fluorouracil Induces Apoptosis in Mouse Thymocytes *in Vivo* via Activation of the CD95/APO-1/Fas System. Simon T. Eichhorst, Susanne Mierke-Holter, Markus A. Weigand, and Peter H. Kramer.
- 249 Aberrant Promoter Methylation of Multiple Genes in Non-Small Cell Lung Cancers. Sabine Zickbauer-Müller, Kwam M. Fong, Arvind K. Virmani, Joseph Gerardo, Adi F. Gazdar, and John D. Minna.
- 256 Transforming Growth Factor- $\beta$ -induced Growth Inhibition in a Smad4 Mutant Colon Adenoma Cell Line. Stephen P. Fink, Sandra E. Swales, James D. Lutterbaugh, Juan M. Magagnoli, Sam Thiaigalingam, Kenneth W. Kinzler, Bert Vogelstein, James K. V. Willson, and Sanford Markowitz.
- 261 A Role for CCAAT/Enhancer Binding Protein  $\beta$ -Liver-enriched Inhibitory Protein in Mammary Epithelial Cell Proliferation. Cynthia A. Zahnow, Robert D. Cardiff, Rodolfo Lacortina, Daniel Medina, and Jeffrey M. Rosen.

- 270 Nonhomologous End-Joining of Ionizing Radiation-induced DNA Double-stranded Breaks in Human Tumor Cells Deficient in BRCA1 or BRCA2. Huichen Wang, Zhao-Cheng Zeng, Tu-Anh Bui, Steven J. DiBiase, Wei Qin, Fen Xia, Simon N. Powell, and George Iliakis.

- 278 Mutant E-cadherin Breast Cancer Cells Do Not Display Constitutive Wnt Signaling. Marc van de Wetering, Nick Barker, I. Clara Harkes, Marcel van der Heyden, Nicolette J. Dijk, Antonine Holstelt, Jan G. M. Klijn, Hans Clevers, and Mieke Schutte.

- 285 High Resolution Allelotyping of Nonfunctional Pancreatic Endocrine Tumors: Identification of Two Molecular Subgroups with Clinical Implications. Gilda Rigaudi, Eduardo Mestaglio, Patrick S. Moore, Giuseppe Zamboni, Massimo Falconi, Giorgio Talamini, Anna Pesci, Antonella Baroni, Daniele Lissandini, Guido Rindi, Piergiovanni Grigolotto, Paolo Pedersoli, and Aldo Scarpa.

### Tumor Biology

- 293 Five Novel Hormone-responsive Cell Lines Derived from Murine Mammary Ductal Carcinomas: *In Vivo* and *In Vitro* Effects of Estrogens and Progesterone. Claudia Lian, Juel Luthy, Caroline A. Lamb, Victoria Fabris, Eleonora Pagano, Luisa A. Helgerson, Norberto Sanjnan, Susana Merani, and Alfredo A. Molinolo.
- 303 Expression of Cyclooxygenase 2 in Human Malignant Melanoma. Carsten Dostert, Martin Köbel, Stefan Berger, Anja Siebert, Anja Leclerc, Uwe Treiterer, and Steffen Hestermann.
- 309 Modulation of Tumor Angiogenesis by Conditional Expression of Fibroblast Growth Factor-2 Affects Early but Not Established Tumors. Raffaella Giavazzi, Roberta Giuliani, Daniela Colnaghi, Maria Rosa Bani, Cristina Ferri, Barbara Semino, Maria Pia Molinari Tosani, Antonella Stoppaccaro, and Marco Presta.
- 313 Antiproliferative Role of Endogenous Nitric Oxide in Human Melanoma Cells. Omberio Salvucci, Marilisa Casanova, Ilaria Bersani, Gabriela Tragni, and Andrea Anichini.
- 327 p53 Induction and Apoptosis in Response to Radio- and Chemotherapy *In Vivo* Is Tumor-Type-dependent. Christopher J. Kemp, Shaoli Sun, and Kay E. Gurvey.
- 333 Apoptosis: An Early Event in Metastatic Inefficiency. Christopher W. Wong, Andrea Lee, Lisa Sheng, Jong Yu, Yao Dong, Gary Kan, Abu B. Al-Mehdi, Eric J. Bernhard, and Ruth J. Muschel.
- 339 Laminin Isoforms 8 and 10 Are Primary Components of the Subendothelial Basement Membrane Promoting Interaction with Neoplastic Lymphocytes. Paola Spessotto, Zhibin Yin, Gaetano Magro, Rainer Deutmann, Arlette Chie, Karl-Ludwig Schaller, Hans Burger, And Semjonov, Lothar Hertle, Barbara Dockhorn-Dowiczak, Hans-Joachim Tepe, and Werner Bicker.
- 363 Neuroblastoma-derived Gangliosides Inhibit Dendritic Cell Generation and Function. Galina V. Sornin, Michael R. Shurin, Svetlana Bykova-Kovaleva, Jeffrey Shogan, Michael T. Lotze, and Edward M. Barkdale, Jr.
- 370 Specifically Targeted Killing of Carcinosarcoma Antigen (CEA)-expressing Cells by a Retroviral Vector Displaying Single-Chain Variable Fragment Antibody to CEA and Carrying the Gene for Inducible Nitric Oxide Synthase. Prady D. Khare, Liao Shao-Xi, Motomu Kuraki, Masahiko Hirose, Fumiko Arakawa, Ken Nakamura, Yoshihiro Tomita, and Yasuhiko Kuraki.
- 376 Matrix Metalloproteinase 2 in Tumor Cell-induced Platelet Aggregation: Regulation by Nitric Oxide. Paul Jurazo, Gregorio Sawicki, Marek Duszyn, Jolanta Sawicki, Carlos Miranda, Irvin Mayers, and Marek W. Radomski.
- 383 Interleukin 6 Inhibits Proliferation and, in Cooperation with an Epidermal Growth Factor Receptor Autocrine Loop, Increases Migration of T47D Breast Cancer Cells. Ali Badache and Nancy E. Hynes.
- 392 D-24851, a Novel Synthetic Microtubule Inhibitor, Exerts Curative Antitumor Activity *In Vivo*. Shosha Effects Intra-tumoral Multidrug-resistant Tumor Cells, and Lacks Neurotoxicity. Gerald Bacher, Bernd Nickel, Peter Emig, Udo Vanhoefer, Siegfried Seiber, Alexei Shalla, Thomas Kleinert, and Thomas Beckers.
- 400 Heregulin Regulation of Urokinase Plasminogen Activator and Its Receptor: Regulation by Nitric Oxide. Paul Jurazo, Gregorio Sawicki, Marek Duszyn, Douglas Boyd, and Rakesh Kumar.

### Announcements

2001 Annual Meeting  
Future Annual Meetings of the American Association for Cancer Research  
Late-breaking Research Session at the Annual Meeting  
Workshop on Pathobiology of Cancer  
Workshop on Molecular Biology in Clinical Oncology  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

### Instructions for Authors

### Author Index

## Advances in Brief

- 419 **Inducible Nitric Oxide Synthase (iNOS) Is Expressed Similarly in Multiple Aberrant Crypt Foci and Colorectal Tumors from the Same Patients.** Xing Pei Han, Thomas G. Prellow, J. Sunil Rao, and Theresa P. Prellow.
- 423 **Altered Expression of Androgen Receptor in the Malignant Epithelium and Adjacent Stromal Is Associated with Early Relapse in Prostate Cancer.** Susan M. Henshall, David I. Quinn, C. Soon Lee, Darren R. Head, David Golovsky, Phillip C. Brenner, Warwick Delprado, Phillip D. Stricker, John J. Grygiel, and Robert L. Sutherland.
- 428 **Persistent Genetic Instability in Cancer Cells Induced by Non-DNA-damaging Stress Exposures.** Chuan-Yuan Li, John B. Little, Kang Hu, Wen Zhang, Li Zhang, Mark W. Dewhirst, and Qian Huang.
- 433 **Assessment of Tumor Necrosis Factor Receptor and Fas Signaling Pathways by Transcriptional Profiling.** Elizabeth J. Munos and David A. Jones.
- 439 **A Novel Response of Cancer Cells to Radiation Involves Autophagy and Formation of Acidic Vesicles.** Shoshana Paglin, Timothy Hollister, Thomas Delahery, Nadia Hackett, Melissa McMahon, Eleana Sphicas, Diane Domingos, and Joachim Yahalom.
- 445 **Absence of Endothelial Cells, Central Necrosis, and Fibrosis Are Associated with Aggressive Inflammatory Breast Cancer.** Kazuo Shirakawa, Hiroshi Tsuda, Yuki Heike, Katsunori Kato, Rumiko Asada, Motoki Inomata, Hiroki Sasaki, Fujio Kasumi, Masataka Yoshimoto, Toshiko Iwanaga, Fumio Komibi, Masaki Terada, and Hiroaki Wakaguni.
- 452 **Cocexpression of CD40 and CD40 Ligand in Cutaneous T-Cell Lymphoma (Mycosis Fungoides).** Monique Storz, Karoline Zepner, Jivko Karamchev, Reinhard Dummer, Günter Burg, and Andreas C. Hiffler.
- 455 **Cadmium-induced Malignant Transformation of Human Prostate Epithelial Cells.** William E. Achanzar, Bhaskar Das, A. Dwan, Jie Liu, Salman T. Qader, Mukta M. Webber, and Michael P. Waalkes.
- 459 **Antitumor Immunity Induced by Laser Immunotherapy and Its Adoptive Transfer.** Wei R. Chen, Anil K. Singhal, Hong Liu, and Robert E. Nordquist.
- 462 **RB2p139 Gene-enhanced Expression Down-Regulates Vascular Endothelial Growth Factor Expression and Inhibits Angiogenesis in Vivo.** Pier Paolo Claudio, Peter Siegel, Gerdner M. Howard, Cristiana Bellan, Corrado Mimmo, Gian Marco Tosi, James Rak, Al Kovatch, Paola De Fazio, Pietro Micheli, Mario Caputi, Lorenzo Leoncini, Robert Korb, Giovan Giacomo Giordano, and Antonio Giordano.
- 469 **Interferon  $\gamma$ -dependent Induction of Thymidine Phosphorylase/Platelet-derived Endothelial Growth Factor Induced by  $\gamma$ -activated Sequence-like Element in Human Macrophages.** Hisatsugu Goto, Kimihiro Kobayashi, Saburo Sone, Shin-ichi Akiyama, Michiko Kawanishi, and Mayumi Ono.
- 474 **Synthetic Protein Transduction Domains: Enhanced Transduction Potential *In Vitro* and *In Vivo*.** Alan Ho, Steven R. Schwarze, Sarah J. Mermerstein, Gabriel Waksman, and Steven F. Dowdy.
- 478 **Soluble Recombinant Endostatin Purified from *Escherichia coli*: Antiangiogenic Activity and Antitumor Effect.** Xiaojun Huang, Michael K. P. Wong, Qun Zhao, Zhenyu Zhu, Kent Z. Q. Wang, Nancy Huang, Caisheng Ye, Elieser Gorelik, and Mengteng Li.
- 482 **Identifying Mutations in the Transforming Growth Factor  $\beta$  Type 2 Receptor in Recurrent Human Breast Cancer.** Chris D. Lucke, Anna Philipp, James C. Metcalfe, Alastair M. Thompson, Luke Hughes-Davies, Paul R. Kemp, and Robin Heskel.
- 486 **p53 Induction Prevents Accumulation of Aberrant Transcripts in Cancer Cells.** Caroline Moyer-Lalle, Cyril Duriez, Joris Van Kerckhove, Christel Gilbert, Qing Wang, and Alain Puisieux.
- 489 **Posttranslational Truncation and Inactivation of Human E-Cadherin Distinguishes Prostate Cancer from Matched Normal Prostate.** Michael G. Rashid, Martin G. Sands, Christopher J. Vallorosi, Jonathan Rio-Doria, Mark A. Rubin, and Mark L. Day.
- 493 **Oligoclonal T-Cell Receptor Usage of Melanocyte Differentiation Antigen-related T Cells in Stage IV Melanoma Patients.** David Schrama, Mads Hald Andersen, Patrick Terheyden, Louise Schröder, Lars Østergaard Pedersen, Per Thor Straten, and Jürgen C. Becker.
- 497 **15S-Hydroxyicosatetraenoic Acid Activates Peroxisome Proliferator-activated Receptor  $\gamma$  and Inhibits Proliferation in PC3 Prostate Carcinoma Cells.** Scott B. Shuppert, Rajnish A. Gupta, Suzanne Manning, Robert Whitehead, William E. Boeglin, Claus Schneider, Tom Case, James Price, Gregory S. Jack, Thomas M. Wheeler, Robert J. Matosik, Alan R. Brash, and Raymond N. Dalbois.
- 504 **Use of Camptothecin-resistant Mammalian Cell Lines to Evaluate the Role of Topoisomerase I in the Antiproliferative Activity of the Indolocarbazole, NB-506, and Its Topoisomerase I Binding Site.** Yoshimasa Urasaki, Gary Laco, Yuki Takebayashi, Christian Bailly, Glenda Kohlhaugen, and Yves Monnier.
- 509 **Frequent Cytolytic T-Cell Responses to Peptide MAGE-A10254-262 in Melanoma.** Daniela Valmori, Valérie Dutot, Verena Rubio-Godoy, Céline Chambaz, Danièle Lhadin, Philippe Guillaume, Pedro Romero, Jean-Charles Cerottini, and Donata Rimoldi.
- 513 **Loss of p53 but not ARF Accelerates Medulloblastoma in Mice Heterozygous for *patched*.** Cynthia Wetmore, Derek E. Eberhart, and Tom Curran.
- 517 **Antitumor Synergy of CV787, a Prostate Cancer-specific Adenovirus, and Paclitaxel and Docetaxel.** De-Chao Yu, Yu Chen, Jeannette Dilley, Yuanhua Li, Millicent Embry, Hong Zhang, Natalie Nguyen, Pinky Amin, Joe Oh, and Daniel R. Henderson.
- 538 **Deregulated Expression of *c-myc* in Non-Small Cell Lung Carcinomas: Relationship with p53 Status, Genomic Instability, and Tumor Kinetics.** Vassilis G. Gorgoulis, Panayotis Zacharatos, George Mariatos, Triantafyllou Liloglou, Stavros Kokotas, Nikolaos Kastrinakis, Athanasios Kotsinas, Athanasios Albanasou, Pericles Foudas, Vassilios Zoumpoulis, Dimitris Kikias, John Ikonopoulos, Panayotis J. Asimacopoulos, Christos Kittas, and John K. Field.
- 550 **Transforming Growth Factor- $\beta$ 1 Induces Desmoplasia in an Experimental Model of Human Pancreatic Carcinoma.** Matthias Lohr, Christian Schmidt, Jörg Ringel, Mario Kluhn, Petra Müller, Horst Nizze, and Ralf Jesnowski.
- 556 **Increased Retinoic Acid Responsiveness in Lung Carcinoma Cells that Are Nonresponsive Despite the Presence of Endogenous Retinoic Acid Receptor (RAR)  $\beta$  by Expression of Exogenous Retinoid Receptors Retinoid X Receptor  $\alpha$ , RAR $\alpha$ , and RAR $\gamma$ .** Haisu Wan, Wam K. Hong, and Reuben Lusan.
- 565 **Targeted Inactivation of the p21<sup>WAF1/cip1</sup> Gene Enhances Apc-initiated Tumor Formation and the Tumor-promoting Activity of a Western-Style High-Risk Diet by Altering Cell Maturation in the Intestinal Mucosa.** Wan Cai Yang, Joseph Mathew, Anna Velich, Winfried Edelmann, Raju Kacherlapati, Martin Lipkin, Kai Yang, and Leonard H. Augenlicht.
- 570 **The Sp Family of Transcription Factors in the Regulation of the Human and Mouse *MUC2* Gene Promoters.** Fauzia Aslam, Lisa Palumbo, Leonard H. Augenlicht, and Anna Velich.
- 577 **Matrix Metalloproteinase-7-mediated Cleavage of Fas Ligand Protects Tumor Cells from Chemotherapeutic Drug Cytotoxicity.** Nicholas Mitsides, Wei-hsuan Yu, Vassiliki Poulaki, Maria Tsokos, and Ivan Stamenkovic.
- 582 **Overexpression of the G-Protein Inwardly Rectifying Potassium Channel 1 (*GIRK1*) in Primary Breast Carcinomas Correlates with Axillary Lymph Node Metastasis.** Bradley K. Stringer, Amiel G. Cooper, and Scott B. Shepard.
- 589 **AKT Activation Up-Regulates Insulin-like Growth Factor I Receptor Expression and Promotes Invasiveness of Human Pancreatic Cancer Cells.** Satoshi Tanno, Sachie Tanino, Yasuhiro Mitsuuchi, Deborah A. Altomare, Guang-Hui Xian, and Joseph R. Testa.
- 594 **BCI-2 Delays and Alters Hepatic Carcinogenesis Induced by Transforming Growth Factor  $\alpha$ .** Mary E. Vail, Robert H. Pierce, and Nelson Fausto.
- 602 **Raf-induced Transduction Requires an Interleukin 1 Autocrine Loop.** Terry Vale, Teri T. Ngo, Michael A. White, and Peter E. Lipsky.

## Carcinogenesis

608 **p53 Codon 72 Polymorphism and Various Human Papillomavirus 16 E6 Genotypes Are Risk Factors for Cervical Cancer Development.** Ingeborg Zehbe, Gianfranco Vignoli, Erik Wiedner, Hajo Delius, Antonella Marongiu, Lutz Eilber, Fritz Kilmek, Soja Anderson, and Massimo Tommasini.

612 **Tobacco Smoke-induced DNA Damage and an Early Age of Smoking Initiation Induce Chromosome Loss at 3p21 in Lung Cancer.** Tomoko Hirao, Heather H. Nelson, Tara Devi S. Ashok, John C. Wain, Eugene J. Mark, David C. Christiani, John K. Wiencke, and Karl T. Kelsey.

616 **Human Papillomavirus Type 16 E6 Inactivation of p53 in Normal Human Mammary Epithelial Cells Promotes Tamoxifen-mediated Apoptosis.** Victoria L. Seewald, Krzysztof Mrózek, Eric C. Dietze, Molly Parker, and L. Elizabeth Caldwell.

625 **Hypertelorism Promotes Adenoma Progression in the APC<sup>Min/+</sup> Mouse Model of Familial Adenomatous Polyposis.** Sue A. Watson and Andrew M. Smith.

## Endocrinology

632 **Expression of Estrogen Receptor (ER) Subtypes and ER $\beta$  Isoforms in Lung Cancer.** Martha Campbell-Thompson, E. Jeanette Lynch, and Bhavna Bhardwaj.

## Immunology

641 **Intranasal Immunization with Tumor Lysate-pulsed Dendritic Cells Enhances Protective Antitumor Immunity.** Laura A. Lambert, Glen R. Gibson, Marybeth Maloney, Brigit Durell, Randolph J. Noelle, and Richard J. Barr Jr.

## Molecular Biology and Genetics

647 **Cyclin E Is the Only Cyclin-dependent Kinase 2-associated Cyclin that Predicts Metastasis and Survival in Early Stage Non-Small Cell Lung Cancer.** Carsten Müller-Tidow, Ralf Metzger, Katrin Kugler, Sven Diederichs, Gregory Idos, Michael Thomas, Barbara Dockhorn-Dworniczak, Paul M. Schneider, H. Philip Koefler, Wolfgang E. Berdel, and Hubert Severe.

654 **Glycophosphatidylinositol-anchored Protein Deficiency as a Marker of Maturational Phenotypes in Cancer.** Rui Chen, James R. Eshleman, Robert A. Brodsky, and M. Edward Medof.

659 **Bax Accelerates Tumorigenesis in p53-deficient Mice.** C. Michael Kudson, Geoffrey M. Johnson, Yuan Lin, and Stanley J. Korsmeyer.

666 **Creation and Characterization of 5-Fluorouracil-resistant Arg<sup>50</sup> Loop Mutants of Human Thymidylate Synthase.** Daniel M. Lands, Cory C. Heindel, and Lawrence A. Leeb.

673 **Nuclear Factor- $\kappa$ B-dependent Expression of Metastasis Suppressor *KAI1/CD82* Gene in Lung Cancer Cell Lines Expressing Mutant p53.** Tatsuhiro Shimbara, Toyokazu Miki, Naoki Nishimura, Hiroshi Nishikura, Hirofumi Hamada, Naofumi Mukaida, and Saburo Sone.

679 **Homologous Deletion of *CDKN2A* (*p16<sup>INK4a</sup>/p14<sup>ARF</sup>*) but not within *1p36* or at Other Tumor Suppressor Loci in Neuroblastoma.** Patricia M. Thompson, John M. Maris, Michael D. Hargay, Robert C. Seeger, C. Patrick Reynolds, Garrett M. Brodeur, and Peter S. White.

## Experimental Therapeutics

687 **Glucagon-like Peptide (GLP-2) Reduces Chemotherapy-associated Mortality and Enhances Cell Survival in Cells Expressing a Transfected GLP-2 Receptor.** Robert F. Bosnyak, Bernardo Yosta, and Daniel J. Drucker.

694 **Taxane-Antibody Conjugates Afford Potent Cytotoxicity, Enhanced Solubility, and Tumor Target Selectivity.** Véronique Guillemand and H. Uri Saragovi.

700 **Granulocytic Differentiation of Human NB4 Promyelocytic Leukemia Cells Induced by All-trans Retinoic Acid Metabolites.** Nadia Ides, Gérard Benoit, Maria A. Flexor, Michel Lanotte, and Guy G. Chabot.

706 **Intrastriatal Transplantation of Testicular Cells from Leukemic Rats Causes Transmission of Leukemia.** Kari Jahnukainen, Mi Hsu, Cecilia Petersen, Brian Setchell, and Olle Söder.

711 **Targeted Delivery of Tissue Factor to the ED-B Domain of Fibronectin, a Marker of Angiogenesis, Mediates the Infarction of Solid Tumors in Mice.** Fredrik Nilsson, Hartwig Koneehl, Luciano Zardi, and Dario Neri.

717 **A Photobiological and Photophysical-based Study of Phototoxicity of Two Chlorins.** Brian W. Pogue, Bernhard Orel, Norah Chen, Robert W. Redmond, and Tayyaba Hasan.

725 **Antiproliferative Effects of S-allylmercaptocysteine on Colon Cancer Cells When Tested Alone or in Combination with Sulfinate Sulfide.** Haim Shrin, John T. Pinto, Yuichi Kawabata, Jae-Won Soh, Thomas Delahery, Steven F. Moss, Vandavalli Murty, Richard S. Rivlin, Peter R. Holt, and I. Bernard Weinstein.

732 **Differential p53-dependent Mechanism of Radiosensitization *In Vitro* and *In Vivo* by the Protein Kinase C-specific Inhibitor PKC412.** Kathrin Zaugg, Sonia Rocha, Hildegarde Resch, Ivan Hegyi, Christoph Oehler, Christoph Glanzmann, Dorian Fabbro, Stephan Bos, and Martin Pruschy.

739 **The HER Tyrosine Kinase Inhibitor C11033 Enhances Cytotoxicity of 7-Ethyl-10-hydroxycamptothecin and Topotecan by Inhibiting Breast Cancer Resistance Protein-mediated Drug Efflux.** Charles Erlichman, Scott A. Boerner, Christopher G. Hallgren, Rebecca Spicker, Xiao-Yang Wang, C. David James, George L. Scheffer, Marc Mallepand, Douglas D. Ross, Keith C. Bible, and Scott H. Kaufman.

749 ***In Vitro* and *In Vivo* Reversal of P-Glycoprotein-mediated Multidrug Resistance by a Novel Potent Modulator, XR9576.** Prakash Mistry, Alastair J. Stewart, Wendy Dunderfield, Sale Okiji, Chris Liddle, Douglas Bootle, Jane A. Plumb, David Templeton, and Peter Charlton.

759 **Pretreatment with Paclitaxel Enhances Apo-2 Ligand/Tumor Necrosis Factor-related Apoptosis-inducing Ligand-induced Apoptosis of Prostate Cancer Cells by Inducing Death Receptors 4 and 5 Protein Levels.** Ramadevi Nimmampalli, Charles L. Perkins, Mariangeli Orlando, Erica O'Bryan, Diep Nguyen, and Kapil N. Bhalla.

764 **A Truncated Human Xeroderma Pigmentosum Complementation Group A Protein Expressed from an Adenovirus Sensitizes Human Tumor Cells to Ultraviolet Light and Cisplatin.** Elizabeth Rosenberg, Mohiuddin M. Taher, Nancy B. Kuemmerle, Julie Farnsworth, and Kristoffer Valerie.

771 **Cumulative and Irreversible Cardiac Mitochondrial Dysfunction Induced by Doxorubicin.** Shaoyu Zhou, Anatoli Starikov, M. Kent Forrester, Richard L. Leino, and Kendall B. Wallace.

## Epidemiology

778 **Nitrated and Oxidized Plasma Proteins in Smokers and Lung Cancer Patients.** Brigitte Pignatelli, Chun-Qi Li, Paolo Boffetta, Qipeng Chen, Wolfgang Ahrens, Fredrik Nyberg, Anush Mukeria, Irene Bruke-Hoffeld, Cristina Fortes, Vali Constantinescu, Harry Ichimopoulos, and Hiroshi Oshima.

785 **Building a Multigenic Model of Breast Cancer Susceptibility: *CYP17* and *HSD17B1* Are Two Important Candidates.** Heather Spencer Feigelson, Roberta McKean-Cowdin, Gerhard A. Coetzee, Daniel O. Stram, Laurence N. Kolonel, and Brian E. Henderson.

## Announcements

2001 Annual Meeting  
Future Annual Meetings of the American Association for Cancer Research  
Late-breaking Research Session at the Annual Meeting  
Workshop on Pathobiology of Cancer  
Workshop on Molecular Biology in Clinical Oncology  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## Correction

M. V. Fournier et al., Cancer Res., 59: 3748-3753, 1999.

## Author Index

## Regular Articles

## Tumor Biology

- 526 **Intratumoral Administration of Endostatin Plasmid Inhibits Vascular Growth and Perfusion in Mice-4 Murine Mammary Carcinomas.** Ivan Ding, Jian Zhong Sun, Bruce Fenton, Wei Min Liu, Paul Kimmey, Paul Kimmey, and Wang Min.
- 532 **Direct Evidence of the Importance of Stromal Urokinase Plasminogen Activator (uPA) in the Growth of an Experimental Human Breast Cancer Using a Combined uPA Gene-Disrupted and Immunodeficient Xenograft Model.** Thomas Leif Frandsen, Claus Høls Hansen, Boye Schnack Nielsen, B. Jørg Christensen, Jens R. Nyengaard, Peter Carmeliet, and Nils Brünner.

## Perspectives in Cancer Research

- 795 **Tumor Hypoxia, the Physiological Link between Trousseau's Syndrome and Carcinoma-induced Coagulopathy** and Metastasis. Nicholas C. Denko and Amato J. Giaccia

## Review

- 799 **Selected Cell and Selective Microenvironment in Neoplastic Development.** Harry Rubin.

## Advances in Brief

- 808 **Protein Kinase C- $\alpha$  Transgenic Mice: A Unique Model for Metastatic Squamous Cell Carcinoma.** Aaron P. Jansen, Eric G. Verschoor, Nancy E. Deckshmidt, Denis L. Wheeler, Terry D. Oberley, and Ajit K. Verma.
- 813 **Efficient Oncolysis by a Replicating Adenovirus (Ad) *In Vivo* is Critically Dependent on Tumor Expression of Primary Ad Receptors.** Joanne T. Douglas, Myunghee Kim, Lucretia A. Sumrell, Delicia E. Carey, and David T. Curfel.
- 818 **Evidence That Genetic Instability Occurs at an Early Stage of Colorectal Tumorigenesis.** Le-Ming Shih, Wei Zhou, Steven N. Goodman, Christoph Lengauer, Kenneth W. Kinzler, and Bert Vogelstein.
- 823 **PAX3 Is Expressed in Human Melanomas and Contributes to Tumor Cell Survival.** Florence A. Scholl, Joost Kamathadas, Umar V. Mummam, Ralf Goetsen, Reinhard Dummer, and Beat W. Schuler.
- 827 **Methylation of O-6-Methylguanine DNA Methyltransferase Characterizes a Subset of Colorectal Cancer with Low-level DNA Mismatch Repair.** Vicki L. J. Wittekindt, Michael D. Walsh, Joanne Young, Barbara A. Leggett, and Jeremy R. Jass.
- 831 **Simultaneous Detection of Multiple Genetic Aberrations in Single Cells by Spectral Fluorescence *In Situ* Hybridization.** Marilyn L. Slovak, Lucene Tcheurekdjian, Feiyu F. Zhang, and Joyce L. Murta-Collins.
- 837 **Loss of Fhl Expression Is a Predictor of Poor Outcome in Tongue Cancer.** Janet I. Lee, Jean-Charles Soria, Khaled Hassan, Diane Liu, Ximing Tang, Adel El-Naggar, Wan Ki Hong, and Li Mao.
- 842 **Vaccination of Malignant Glioma Patients with Peptide-pulsed Dendritic Cells Elicits Systemic Cytotoxicity and Intracranial T-cell Infiltration.** John S. Yu, Christopher J. Wheeler, Paul M. Zeltzer, Han Ying, Divina N. Finger, Paul K. Lee, William H. Yong, Francesa Incardona, Reid C. Thompson, Mary S. Riedinger, Wenxuan Zhang, Robert M. Prins, and Keith L. Black.
- 848 **Risk of Endometrial Cancer and Estrogen Replacement Therapy History by CYP17 Genotype.** Roberta McKean-Cowdin, Heather Spencer Feigelson, Malcolm C. Pike, Gerhard A. Coetzee, Laurence N. Kolonel, and Brian E. Henderson.
- 850 **Inhibition of Epidermal Growth Factor-induced Cell Transformation and Activator Protein 1 Activation by [6]-Gingerol.** Ann M. Bode, Wei-Ya Ma, Young-Joon Suh, and Zigang Dong.
- 854 **A Mammalian Two-Hybrid System for Adenomatous Polyposis Coli-Mutated Colon Cancer Therapeutics.** Kenichi Wakita, Osamu Tetsu, and Frank McCormick.
- 859 **Therapeutic Tumor Immunity Induced by Polyimmunization with Melanoma Antigens gp100 and TRP-2.** Sanjeev Kumar Mendiratta, Gerald Thai, Nima K. Eshali, Nalyn M. Thull, Manjiv Kumar, Vincenzo Bronte, and Federico Pericle.
- 864 **Intranasal Polymer-based Delivery of Cyclophosphamide for Intratumoral Bioconversion by a Replicating Oncolytic Viral Vector.** Tomotatsu Ichikawa, William P. Petros, Susan M. Ludeman, Jim Fangermeier, Eric H. Hochberg, O. Michael Colvin, and E. Antonio Chiocca.
- 869 **Identification of a Cytotoxic T Lymphocyte Response to the Apoptosis Inhibitor Protein Survivin in Cancer Patients.** Mads Hald Andersen, Lars Ostergaard Pedersen, Jørgen C. Becker, and Per Thor Straten.
- 873 **Cytotoxic T Lymphocytes from HLA-A2.1 Transgenic Mice Define a Potential Human Epitope from Simian Virus 40 Large T Antigen.** Todd D. Schell, John D. Lippolis, and Savir S. Tevethia.
- 880 **The Collaboration of Both Humoral and Cellular HER-2/neu-targeted Immune Responses Is Required for the Complete Eradication of HER-2/neu-expressing Tumors.** Todd Rollig, Jean-Pascal H. Machiels, Leisha A. Emens, Anne M. Erskine, Françoise L. Okey, Rachel Y. Lei, Diane Weintraub, and Elizabeth M. Jaffee.
- 884 **Interleukin-18 (IL-18) Synergizes with IL-2 to Enhance Cytotoxicity, Interferon- $\gamma$  Production, and Expansion of Natural Killer Cells.** Joong-B. Son, Ramsey M. Dallal, Robbie B. Mailland, Shinichi Egawa, Zdenka L. Jonak, and Michael T. Lotze.
- 889 **Differential Gene Expression Profiles of Scirrhous Gastric Cancer Cells with High Metastatic Potential to Peritoneum or Lymph Nodes.** Yoshitaka Hippo, Masakazu Yoshino, Masami Ishii, Hirokazu Taniguchi, Shuichi Tsutsumi, Kosei Hirakawa, Tatsuhiko Kodama, and Hiroyuki Abaratani.
- 896 **Mismatch Repair Deficiency and Microsatellite Instability in Hereditary and Sporadic Colorectal Carcinoma.** Monica Pedron, Elisa Sala, Alessandra Scarselli, Francesca Borghi, Marco Mengatti, Piero Benatti, Antonio Percepe, Giuseppe Rossi, Maura Foroni, Lorenza Losi, Carmela Di Gregorio, Anna De Pol, Riccardo Nascimbene, Ernesto Di Botta, Bruno Salerni, Maurizio Ponc de Leone, and Luca Roncucci.
- 900 **Detection of Aberrantly Methylated AML1 Promoter DNA in the Serum of Patients with Microsatellite Unstable Colon Cancer.** William M. Grady, Ashwani Rajput, James D. Lutterbaugh, and Sanford D. Markowitz.
- 903 **Overexpression of the Steroid Receptor Coactivator AIB1 in Breast Cancer Correlates with the Absence of Estrogen and Progesterone Receptors and Positivity for p53 and HER2/neu.** Touda Bouras, Melissa C. Southey, and Deon J. Venter.
- 908 **The Androgen Receptor and Genetic Susceptibility to Ovarian Cancer: Results from a Case Series.** Douglas A. Levine and Jeff Boyd.

- 912 **Telomere Length Abnormalities in Mammalian Radiosensitive Cells.** Joanne McElrath, Simon D. Bouffier, Enrique Samper, Andrew Cuthbert, Andrej Wojcik, Irena Szumiel, Peter E. Bryant, Andrew C. Riches, Alastair Thompson, Maria A. Blasco, Robert F. Newbold, and Predrag Slijepcevic.

- 916 **Differential Binding of the Menin Tumor Suppressor Protein to JunD Isoforms.** Oya Yargan and Curt M. Pfaff.

- 921 **Wilms' Tumor Suppressor Gene (WT1) Is Expressed in Primary Breast Tumors Despite Tumor-specific Promoter Methylation.** David M. Loch, Ella Evron, Chirag B. Patel, Prem Mohan Sharma, Brionn Niranjan, Lakshmi Bulowela, Sigmund A. Weitzman, Dorian Koz, and Saravathi Sukumar.

- 926 **Version Accumulation in Human Prostatic Fibroblast Cultures Is Enhanced by Prostate Cancer Cell-derived Transforming Growth Factor  $\beta$ 1.** Andrew J. Sakko, Carmela Ricciardelli, Kerko Mayne, Wayne D. Tilley, Richard G. LeBaron, and David J. Horsfall.

- 931 **MS-275, A Histone Deacetylase Inhibitor, Selectively Induces Transforming Growth Factor  $\beta$  Type II Receptor Expression in Human Breast Cancer Cells.** Byoung Ick Lee, Seok Hee Park, Jin Woo Kim, Edward A. Sawville, Heung Tae Kim, Osamu Nakashima, Jane B. Treppel, and Seong-Jin Kim.

- 935 **p75<sup>N</sup> Overexpression Is Associated with Resistance to Treatment with DNA-damaging Agents in a Human Ovarian Cancer Cell Line.** Fatma Vahankaya, Sergio Marchini, Miko Marabese, Emanuel Gullera, and Massimo Brogini.

- 939 **Promoter Hypermethylation Patterns of p16, p7<sup>N</sup>, Methylguanine-DNA-methyltransferase, and Deacetylase-associated Protein Kinase in Tumors and Saliva of Head and Neck Cancer Patients.** Siang Loo, Bittencourt Rosa, Wayne Koch, Maria da Gloria do Costa Carvalho, Li Wu, Joseph Califano, William Westra, Jin Jen, and David Sidransky.

## Regular Articles

## Biochemistry and Biophysics

- 943 **Phorbol Esters Modulate the Ras Exchange Factor RasGRP3.** Patricia S. Lorenzo, Justin W. Kung, Dreli A. Bottorff, Susan H. Garfield, James C. Stone, and Peter M. Blumberg.
- 950 **High Density O-Glycosylation of the MUC2 Tandem Repeat Unit by N-Acetylglucosaminyltransferase-3 in Colon Adenocarcinoma Extracts.** Mirae Inoue, Shoji Takahashi, Ikuo Yamashita, Masaki Kaibori, Tadayoshi Okumura, Yasuo Kamiyama, Sophie Vichier-Guerre, Danielle Cantacuzene, and Hiroshi Nakada.
- 955 **Identification of Precursor Forms of Free Prostate-specific Antigen in Serum of Prostate Cancer Patients by Immunomigration and Mass Spectrometry.** Jochen Peter, Carlo Uebergart, Thomas N. Krogh, Ole Vorm, and Wolfgang Hoesel.
- 963 **Kinase Suppressor of Ras Is Necessary for Tumor Necrosis Factor  $\alpha$  Activation of Extracellular Signal-regulated Kinase/Mitogen-activated Protein Kinase in Intestinal Epithelial Cells.** Fan Yang and D. Brent Polk.

## Carcinogenesis

- 969 **Overexpression of Plasmogen Activator Inhibitor Type 2 in Basal Keratinocytes Enhances Papilloma Formation in Transgenic Mice.** Hong-Ming Zhou, Isabelle Bolon, Anthony Nichols, Anneliese Wohlwend, and Jean-Dominique Vassalli.
- 977 **Early p53-positive Fox as Indicators of Tumor Risk in Ultraviolet-exposed Hairless Mice: Kinetics of Induction, Effects of DNA Repair Deficiency, and p53 Heterozygosity.** Hegger Rebel, Laurent O. Monier, Rob J. W. Berg, Anja Westerman-de Vries, Harry van Steeg, Henk J. van Kranen, and Frank R. de Groot.
- 984 **Overexpression of Membrane-type Matrix Metalloproteinase-1 Gene Induces Mammary Gland Abnormalities and Adenocarcinoma in Transgenic Mice.** Hye-Young Ha, Hyung-Bae Moon, Myoung-Soo Nam, Jeong-Woong Lee, Zae-Young Ryoo, Tae-Hoon Lee, Kyung-Kwang Lee, Byung-Jan So, Hiroshi Sato, Motoharu Seki, and Dae-Yeol Yu.

## Clinical Investigations

- 991 **Protoporphyrin IX Occurs Naturally in Colorectal Cancers and Their Metastases.** K. Thomas Meeley, Berta I. Zent, Tim Hambley, Dirk Nolte, Christian Nowak, Wolfgang E. Haensch, Rasmus K. Pandey, Thomas J. Dougherty, Herbert Rinneberg, and Peter M. Schlag.

## Epidemiology and Prevention

- 1000 **A Molecular Variant of the APC Gene at Codon 1822: Its Association with Diet, Lifestyle, and Risk of Colon Cancer.** Martha L. Slattery, Wade Samowitz, Linda Ballard, Donna Schaffer, Mark Leppert, and John D. Potter.

## Experimental Therapeutics

- 1005 **Electroporation-mediated Interleukin-12 Gene Therapy for Hepatocellular Carcinoma in the Mice Model.** Yo-ichi Yamashita, Mitsuo Shimada, Hirofumi Hasegawa, Ryoichi Minagawa, Tatsuya Rikimaru, Takayuki Hamada, Shiji Tanaka, Ken Shirabe, Jun-ichi Miyazaki, and Keizo Sugimachi.
- 1013 ***In Vitro* and *In Vivo* Anticancer Activities of Synthetic Macrocyclic Ketone Analogues of Halobutrin B.** Murray J. Towle, Kathleen A. Salvato, Jacqueline Badrow, Bruce F. Wells, Galina Kuznetsov, Kimberley K. Aalfs, Susan Welsh, Wanjun Zhang, Boris M. Seletsky, Monica H. Palmer, Gregory J. Hahgood, Lori A. Singer, Lucian V. DiPietro, Yuan Wang, Jack J. Chen, David A. Quincy, Ashley Dreyer, Kentaro Yoshimatsu, Yoshiko Kishi, Melvin J. Yu, and Bruce A. Liffelield.
- 1022 **Metallin: A Hyaluronan-binding Complex from Cartilage That Inhibits Tumor Growth.** Ningling Liu, Randall K. Lapevich, Charles B. Underhill, Ziqun Han, Feng Gao, Glenn Swartz, Stacy M. Plum, Luong Zhang, and Shawn J. Green.
- 1029 **Dual Antitumor Effects of 5-Fluorouracil on the Cell Cycle in Colorectal Carcinoma Cells: A Novel Target Mechanism Concept for Pharmacokinetic Modulating Chemotherapy.** Ryoichi Yoshikawa, Masato Kusumoto, Hirotoshi Yanagi, Masafumi Noda, Jun-ichi Furuyama, Takehiro Yamamura, and Tomoko Hashimoto-Tamaki.
- 1038 **Anticancer Drugs Induce Increased Mitochondrial Cytochrome c Expression That Precedes Cell Death.** José A. Sánchez-Alcaraz, Alexey Khoshdelov, and Erasmus Schreider.

- 1045 **Tumor Necrosis Factor  $\alpha$  Sensitizes Low Epidermal Growth Factor Receptor (EGFR)-expressing Carcinomas for Anti-EGFR Therapy.** Markus Hunkel, Christine Solbach, Hans-Gregor Schmuer, Mark Rother, Manfred Stiegmüller, Anja Sterner-Kock, Jan Kiefer, and Rainer Knecht.

- 1050 **Triggering of Antitumor Activity Through Melanoma-specific Transduction of a Constitutively Active Tumor Necrosis Factor (TNF) R1 Chimera Receptor in the Absence of TNF- $\alpha$ .** Flavia Bazzoni and Elisabetta Regalia.

- 1058 **Characterization of Metabolites of the Chemopreventive Agent Curcumin in Human and Rat Hepatocytes and in the Rat *In Vivo*, and Evaluation of Their Ability to Inhibit Phorbol Ester-induced Prostaglandin E<sub>2</sub> Production.** Christopher Ireson, Samantha Orr, Don J. L. Jones, Richard Verschoyle, Chang-Kee Lim, Jin-Li Luo, Lynne Howells, Simon Plummer, Rebekah Jukes, Marion Williams, William P. Steward, and Andreas Gescher.

- 1065 **S-Phase Arrest by Nucleoside Analogues and Abrogation of Survival without Cell Cycle Progression by 7-Hydroxystaurosporine.** Zheng Shi, Atsushi Arima, Deepa Sampath, Ye-Xiong Li, Peng Huang, and William Plunkett.

- 1073 **Inhibition of N-cadherin Expression and Induction of Apoptosis by Iron Chelation in Human Neuroblastoma Cells.** Lijun Fan, Jaya Iyer, Shaoyan Zhu, Kevin K. Frick, Randall K. Wada, Allen E. Eskenszky, Patricia E. Berg, Naohiko Ikegaki, Roger H. Kennett, and Christopher N. Frantz.

## Immunology

- 1080 **Enhancement of DNA Vaccine Potency by Linkage of Antigen Gene to a Gene Encoding the Extracellular Domain of Fim-like Tyrosine Kinase 3-Ligand.** Chen-Fu Hung, Keng-Fu Hsu, Wen-Feng Cheng, Che-Yin Chai, Liang-Huei Morris Ling, and T-C. Wu.

- 1089 **Use of an *In Vitro* Immunoselected Tumor Line to Identify Shared Melanoma Antigens Recognized by HLA-A\*0201-restricted T Cells.** Mamoru Harada, Yong F. Li, Mona El-Gamil, Steven A. Rosenberg, and Paul F. Robbins.

- 1095 **Characterization of the Major Histocompatibility Complex Class I Deficiencies in B16 Melanoma Cells.** Barbara Seliger, Ursula Wolscheld, Frank Mueberg, Thomas Blankenship, and Christoph Huber.

- 1100 **Macrophage Arginase Promotes Tumor Cell Growth and Suppresses Nitric Oxide-mediated Tumor Cytotoxicity.** Chung-I Chang, James C. Liao, and Lih Kuo.

- 1107 **Optimal Induction of Effector but not Memory Antitumor Cytotoxic T Lymphocytes Involves Direct Antigen Presentation by the Tumor Cells.** Yarnik Gultbox, Xue-Jing Bai, Xinghui Liu, Pan Zheng, and Yang Liu.

## Molecular Biology &amp; Genetics

- 1113 **Heat-activated Transgene Expression from Adenovirus Vectors Infected into Human Prostate Cancer Cells.** Michael J. Borelli, Diane M. Schoenbrer, Alden Wong, Laura J. Bernack, and Peter M. Corry.
- 1122 **Analysis of Complex Relationships between Age, p53, Epidermal Growth Factor Receptor, and Survival in Glioblastoma Patients.** Martha L. Simmons, Kathleen R. Lamborn, Michelle Takahashi, Pengcheng Chen, Mark A. Israel, Mitchell S. Berger, Tony Godfrey, Janice Nigro, Michael Prados, Susan Chang, Fred G. Barker II, and Ken Aldape.
- 1129 **Different Mechanisms of Radiation-induced Loss of Heterozygosity in Two Human Lymphoid Cell Lines from a Single Donor.** Claudia Wiese, Stacy S. Gandy, Wei-Chung Liu, Corinne L. Chelbun-Lavette, and Anne Krenning.

- 1138 **Signaling Events Triggered by Tumor Necrosis Factor-related Apoptosis-inducing Ligand (TRAIL): Caspase-8 Is Required for TRAIL-induced Apoptosis.** Dai-Wu Seol, Joonmoo Li, Mi-Hyung Seol, Sang-Yeul Park, Robert V. Talanian, and Timothy R. Billiar.

- 1144 **Identification of a Novel Member of the Smad/Smad-1 Receptor Family, *smf1*, Which Is Methylated and Silenced in Liver Tumors of SV40 T Antigen Transgenic Mice.** Minako Tatem, Yoshihiko Fukumitsu, Sui Komatsu, Yasushi Okazaki, Jun Kawan, Kazuhito Shibata, Masayoshi Itoh, Masami Muramatsu, William A. Held, and Yoshitake Hayashizaki.

- 1154 **Evidence for Three Tumor Suppressor Loci on Chromosome 9p Involved in Melanoma Development.** Pamela M. Pollock, John Welch, and Nicholas K. Hayward.

- 1162 **Induction and Intracellular Regulation of Tumor Necrosis Factor-related Apoptosis-inducing Ligand (TRAIL) Mediated Apoptosis in Human Malignant Glioma Cells.** Chunhai Hsu, Francesco Begnini, Genolama Condorelli, Alessandra Tencio, Erwin G. Van Meir, V. Wee Yong, Jan F. Parney, Wilson H. Ross, and Kenneth C. Petruk.

- 1171 **Loss of Heterozygosity Mapping at Chromosome Arm 16q in 712 Breast Tumors Reveals Factors that Influence Delineation of Cancer Regions.** Anne-Marie Clever-Jones, David E. Cullen, Ram Seshadri, Sandra Goldup, Brent McCullum, Joanna Crawford, Jason A. Powell, Cheri Setauket, Herty van Beersdorp, Elita W. Moorland, Vincent T. B. H. M. Smit, William H. Harris, Rosemary Mills, Neil V. Morgan, Diana Barnes, Christopher G. Mathew, and Cees J. Cornelisse.

- 1178 **A Modest Reduction in c-Myc Expression Has Minimal Effects on Cell Growth and Apoptosis but Dramatically Reduces Susceptibility to Ras and Raf Transformation.** Alex V. Bazarov, Susumu Adachi, Sheng-Feng Li, Maria K. Maseyak, Shan Wei, and John M. Sedivy.

- 1187 **Involvement of the Oct-1 Regulatory Element of the *goldf5* Promoter in the p53-independent Response to Ultraviolet Irradiation.** Shoji Takahashi, Shiochi Saito, Naoko Ohtani, and Toshiyuki Sakai.

## Tumor Biology

- 1196 **Expression of Adrenomedullin and Pigment Activation in Human Prostate Cancer and in Human Prostate Cancer Cell Lines.** Palma Rocchi, Françoise Boudaoud, Alfredo J. Zamora, Xavier Mestredet, Eric Lechevalier, Pierre-Marie Martin, and I. Housine Ouaifi.

- 1207 **Involvement of Fhl-1 Tyrosine Kinase (Vascular Endothelial Growth Factor Receptor-1) in Pathological Angiogenesis.** Sachie Hiratsuka, Yoshino Maru, Akiko Okada, Motoharu Seki, Tetsuo Noda, and Masahito Shibuya.

- 1214 **Chromosomal Rearrangements and Oncogene Amplification Precede Renal Proliferation in the Genetic Evolution of Breast Cancer.** Karin Renzsham, Bo Balderston, Soili Kytölä, Minna Tanner, and Jorma Isola.

- 1220 **Intracranial Compartmentalization of Cyclin E during the Cell Cycle: Disruption of the Nucleoplasm-Nuclear Shuttling of Cyclin E in Bladder Cancer.** Gloria Juan and Carlos Cordón-Cardo.



- 1227 Loss of Caspase-1 and Caspase-3 Protein Expression in Human Prostate Cancer.** Rachel N. Winter, Andrew Kramer, Andrew Borkowski, and Natasha Kyrtianou.
- 1233 Induction of Apoptotic Cell Death and Prevention of Tumor Growth by Ceramide Analogues in Metastatic Human Colon Cancer.** Markus Selzer, Alicja Bielawska, Michael A. Morse, Hannes A. Rüdiger, David Sindram, Yusuf A. Hannun, and Pierre-Alain Clavien.

## Advances in Brief

- 1247 Inhibition of Histone Deacetylase Activity by Trichostatin A Modulates Gene Expression during Mouse Embryogenesis without Apparent Toxicity.** Clara Nervi, Ugo Borello, Francesco Fazi, Viviana Buffa, Pier Giuseppe Pelicci, and Giulio Coscia.
- 1250 The ZNF217 Gene Amplified in Breast Cancers Promotes Immortalization of Human Mammary Epithelial Cells.** Genevieve H. Noet, Martha R. Stampfer, Kwei Chin, Joe W. Gray, Colin C. Collins, and Paul Yaswen.
- 1255 The Effects of Angiopoietin-1 and -2 on Tumor Growth and Angiogenesis in Human Colon Cancer.** Syed A. Ahmad, Wenbiao Liu, Young D. Jung, Fan Fan, Michael Wilson, Niels Reinmuth, Raymond M. Shabien, Corazon D. Bucana, and Lee M. Ellis.
- 1260 Apoptosis Induction by the Photosensitizer Verteporfin: Identification of Mitochondrial Adenine Nucleotide Translocator as a Critical Target.** Anne-Sophie Belzacq, Etienne Jacotot, Helena L. A. Vieira, Dominique Mistro, David J. Granville, Zhihua Xie, John C. Reed, Guido Kroemer, and Catherine Brenner.
- 1265 The Fibroblast Growth Factor Receptor 3 (FGFR3) Mutation Is a Strong Indicator of Superficial Bladder Cancer with Low Recurrence Rate.** Bas W. G. van Rhijn, Irene Lurkin, François Radvanyi, Wim J. Kijle, Theodor H. van der Kwast, and Ellen C. Zwartthoff.
- 1269 Age-associated Risk of Cancer among Individuals with N-Acetyltransferase 2 (NAT2) Mutations and Mutations in DNA Mismatch Repair Genes.** Marsha L. Frazier, Frederick T. O'Donnell, Shumang Gong, Xiangjun Gu, Inedda Campos, Rajyalakshmi Lathia, Patrick M. Lynch, and Christopher I. Amos.
- 1272 Hydroxamate-Type Matrix Metalloproteinase Inhibitor Batimastat Promotes Liver Metastasis.** Achim Krüger, Rita Sueli, Igor Sopov, Charlotte Kopitz, Matthias Aili, Viktor Mughlen, Nadia Harbeck, Bernd Ganschacher, and Manfred Schmitt.
- 1276 Coexpression of the Partial Androgen Receptor Enhances the Efficacy of Prostate-specific Antigen Promoter-driven Suicide Gene Therapy for Prostate Cancer Cells at Low Testosterone Concentrations.** Satoshi Suzuki, Takashi Tadokura, Tomohiko Asano, and Masamichi Hayakawa.
- 1280 CEP162, a Dipeptidyl Proteasome Inhibitor, Induces p21<sup>WAF1</sup> and p27<sup>KIP1</sup> Expression and Apoptosis and Inhibits the Growth of the Human Lung Adenocarcinoma A-549 in Nude Mice.** Jiaqi Sun, Sangkil Nam, Chang-Sun Lee, Benyi Li, Domenico Coppola, Andrew D. Hamilton, Qi Ping Dou, and Said M. Sebti.
- 1285 Cytokine Gene Expression in Neoplastic B Cells from Human Mantle Cell, Follicular, and Marginal Zone Lymphomas and in Their Postulated Normal Counterparts.** Irma Airolli, Roberta Guglielmino, Fabio Ghiotto, Anna Corcione, Paola Facchetti, Mauro Trnini, and Vito Pisota.
- 1291 Ovarian Epithelial Cell Lineage-specific Gene Expression Using the Promoter of a Retrovirus-like Element.** Muthu Selvakumar, Ravi Rao, Anne P. G. Crjns, Dennis C. Connolly, Jillian K. Weinstein, and Garrett C. Hamilton.
- 1296 Invasiveness of Cutaneous Malignant Melanoma Is Influenced by Matrix Metalloproteinase-1 Gene Polymorphism.** Shu Ye, Sahar Dhillon, Steven J. Turner, Adrian C. Bateman, Jeffrey M. Theaker, Ruth B. Pickering, Ian Day, and W. Martin Howell.
- 1299 Detection of Mitochondrial DNA Mutations in Pancreatic Cancer Offers a "Mass-ive Advantage over Detection of Nuclear DNA Mutations."** Jessa B. Jones, Jason J. Song, Paula M. Hengen, Giovanni Parmigiani, Ralph H. Hruban, and Scott E. Kern.
- 1305 Epistatic Interactions between Skin Tumor Modifier Loci in Interspecific (*spretus/mesarchus*) Backcross Mice.** Hiroki Nagane, Jian-Hua Mao, John P. de Koning, Tomoe Minami, and Allan Balmain.
- 1309 Chromosomal Alterations in Lung Adenocarcinoma from Smokers and Nonsmokers.** Montserrat Sanchez-Cespedes, Steven A. Ahrendt, Steven Piantadosi, Rafael Rosell, Maria Monzo, Li Wu, William H. Westra, Steven C. Yang, Jin Jen, and David Sidransky.
- 1314 Resistance to Tumor Necrosis Factor-related Apoptosis-inducing Ligand-induced Apoptosis in Neuroblastoma Cells Correlates with a Loss of Caspase-8 Expression.** Angelika Eggert, Michael A. Grotzer, Tzyeh J. Zurak, Barbara R. Wicwold, Ruth Ho, Naohiko Ikegaki, and Garrett M. Brodeur.
- 1320 Breast Stroma Plays a Dominant Regulatory Role in Breast Epithelial Growth and Differentiation: Implications for Tumor Development and Progression.** Malathy P. V. Shekhar, Jill Werdell, Steve J. Santner, Robert J. Pauley, and Larry Tait.
- 1327 DNA Methyltransferase Inhibition Enhances Apoptosis Induced by Histone Deacetylase Inhibitors.** Wei-Guo Zhu, Romola R. Lakshmanan, Matthew D. Beal, and Gregory A. Otterson.
- 1334 Global Effects of Anchorage on Gene Expression during Mammary Carcinoma Cell Growth Reveal Role of Tumor Necrosis Factor-related Apoptosis-inducing Ligand in Anoikis.** Gary S. Goldberg, Zhaoyu Jin, Hiroshi Ichikawa, Akihiro Naito, Misao Oaki, Wafik S. El-Deiry, and Hiroyuki Tsuda.
- 1338 Down-Regulation of Promoter L3 Activity of the Human Aromatase Gene in Breast Tissue by Zinc-finger Protein, Snail (Snail).** Tomoharu Okubo, Thong K. Truong, Bin Yu, Toru Itoh, Jin Zhao, Baiba Grube, Dujun Zhou, and Shuang Chen.
- 1347 Phosphorylation- and SKP1-independent *In Vitro* Ubiquitination of E2F1 by Multiple ROC-Cullin Ligases.** Tomohiko Ohta and Yue Xiong.

## 1241 Announcements

- 2001 Annual Meeting  
Future Annual Meetings of the American Association for Cancer Research  
Late-breaking Research Session at the Annual Meeting  
Workshop on Pathobiology of Cancer  
Workshop on Molecular Biology in Clinical Oncology  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## February 15, Number 4

- 1354 Modulation of Nucleotide Excision Repair Capacity by XPD Polymorphisms in Lung Cancer Patients.** Margaret R. Spitz, Xifeng Wu, Yunfei Wang, Li-E Wang, Sanjay Shete, Christopher I. Amos, Zhaozheng Guo, Lei Lei, Harvey Motenreiser, and Qingyi Wei.

- 1358 Erythropoietin Restores the Anemia-induced Reduction in Cyclophosphamide Cytotoxicity in Rat Tumors.** Oliver Thewissen, K. Kelleher, and Peter Vaupel.

## Regular Articles

## Biochemistry and Biophysics

- 1362 Altered Profiles in Nuclear Matrix Proteins Associated with DNA *In Situ* during Progression of Breast Cancer Cells.** Virginia A. Spencer, Shanti K. Samuel, and James R. Davie.
- 1367 Up-Regulation of Uracilase-Type Plasminogen Activator by Insulin-like Growth Factor-1 Depends upon Phosphatidylinositol-3 Kinase and Mitogen-activated Protein Kinase Kinase.** Sandra E. Dunn, Johann V. Torres, Jennifer S. Oh, David M. Cyster, and J. Carl Barrett.

## Carcinogenesis

- 1375 Elevated Protein Kinase C  $\beta$  II Is an Early Promotive Event in Colon Carcinogenesis.** Yesim Gökmen-Polar, Nicole R. Murray, Marco A. Velasco, Zoran Galicica, and Alan P. Fields.
- 1382 Frequent Mutations of Fas Gene in Thyroid Lymphoma.** Tetsuya Takakura, Zhiming Dong, Hiroshi Takayama, Fumio Masuzuka, Shigeo Nagata, and Katsuyuki Aozasa.
- 1386 Suppression of Tumor Cell Growth Both in Nude Mice and in Culture by  $\alpha$ -3 Polyunsaturated Fatty Acids: Mediation through Cyclooxygenase-independent Pathways.** Mary D. Boudreau, Kyung Hee Sohn, Sang Hoon Rhee, Sam W. Lee, Jay D. Hunt, and Daniel H. Waag.
- 1392 Involvement of Mammalian MLIH1 in the Apoptotic Response to Peroxide-induced Oxidative Stress.** Rebecca A. Hardman, Cynthia A. Afshari, and J. Carl Barrett.
- 1398 Crkl Enhances Leukemogenesis in *BCR/ABL* P190 Transgenic Mice.** Bianca Hemmerlyck, Arnaud van Wijk, Janja Reschert, Vesa Kaartinen, Ron de Jong, Paul K. Pattengale, Ignacio Gonzalez-Gomez, John Griffin, and Nora Heisterkamp.

## Clinical Investigations

- 1406 Increased Gastric Epithelial Cell Apoptosis Associated with Colonization with *cagA+* *Helicobacter pylori* Strains.** Steven F. Moss, Emilia Mia Sordillo, Abdalrhman M. Abdalla, Vladimir Makarov, Zoltan Hanzely, Guillermo I. Perez-Perez, Martin J. Blaser, and Peter R. Holt.
- 1412 P-Glycoprotein and Multidrug Resistance-related Protein Expressions in Relation to Technetium-99m Methoxyisobutylisonitrile Scintimammography Findings.** Chia-Hung Kao, Shih-Chuan Tsai, Tse-Jui Liu, Yung-Jen Ho, Jhi-Joung Wang, Sheng-Tai Ho, and Sheng-Ping Chang-Lai.
- 1415 The C/DOH-Terminal Src Kinase Csk Is a Tumor Antigen in Human Carcinoma.** Christine Bréant, Jean-François Bourgeois, Hellette Chapais, Nicolas Motet, Serge Roche, and Jean-Pierre Bal.
- 1421 Thymidine Kinase and Thymidylate Synthase in Advanced Breast Cancer: Response to Tamoxifen and Chemotherapy.** John A. Fockens, Sylvie Roman, Maxine P. Look, Pierre-Marie Martin, and Jan G. M. Klijn.

## Endocrinology

- 1426 Increased *In Vivo* Phosphorylation of Ret Tyrosine 1062 Is a Potential Pathogenic Mechanism of Multiple Endocrine Neoplasia Type 2B.** Domenico Salvatore, Rosa Marina Melillo, Carmen Monaco, Roberta Viscotti, Gianfranco Penzi, Giancarlo Vecchio, Alfredo Fano, and Massimo Santoro.
- 1432 Role of the Central Melanocortin System in Cachexia.** Daniel L. Marks, Nicholas Ling, and Roger D. Cone.

- 1439 Vitamin D Is a Prooxidant in Breast Cancer Cells.** Ruth Koren, Irit Hadari-Naor, Eilat Zuck, Carmela Rotem, Uri A. Liberman, and Amiram Ravid.

## Epidemiology and Prevention

- 1445 Sensitivity to DNA Damage Induced by Benzo(a)pyrene Diol Epoxide and Risk of Lung Cancer: A Case-Control Analysis.** Donghui Li, Pervez F. Firozi, Li-E Wang, Carol H. Bosken, Margaret R. Spitz, Wan Ki Hong, and Qingyi Wei.
- 1451 Increased Expression of Cyclooxygenase-2 Protein in 4-Nitroquinoline-1-oxide-induced Rat Tongue Carcinomas and Chemopreventive Efficacy of a Specific Inhibitor, Nimesulide.** Hiroshi Shiotani, Ayumi Denda, Kazuhiko Yamamoto, Wakashi Kitayama, Takehiro Endo, Yasutaka Sasaki, Masahiro Tsutsumi, Masahito Sugimura, and Yochi Konoishi.
- 1457 Randomized Trial of Supplemental  $\beta$ -Carotene to Prevent Second Head and Neck Cancer.** Susan T. Mayne, Brenda Carmel, Marianna Baum, Gail Shor-Povner, Barbara G. Faltus, Kenneth Briskin, Judy Bean, Tongsheng Zheng, Dennis Cooper, Craig Friedman, and W. Jarrard Goodwin, Jr.

## 1243 Erratum

January 1, 2001 Cancer Research Table of Contents

## 1244 Author Index

## Experimental Therapeutics

- 1464 Tyrosine Kinase Inhibition of Multiple Angiogenic Growth Factor Receptors Improves Survival in Mice Bearing Colon Cancer Liver Metastases by Inhibition of Endothelial Cell Survival Mechanisms.** Raymond M. Shabien, William W. Tseng, Durren W. Davis, Wenbiao Liu, Niels Reinmuth, Roberto Velillas, Andrew A. Wiczorek, Yasuhiko Ogura, David J. McConkey, Kenneth E. Dragan, Corazon D. Bucana, Gerald McMahon, and Lee M. Ellis.
- 1469 The Pharmacological Phenotype of Combined Multidrug-Resistance *mdr1b*- and *mep1*-deficient Mice.** Dennis R. Johnson, Rick A. Finch, Z. Ping Lin, Caroline J. Zeiss, and Alan C. Sartorelli.
- 1477 Combination of Phenylbutyrate and 13-*cis* Retinoic Acid Inhibits Prostate Tumor Growth and Angiogenesis.** Roberto Pili, Mark P. Krukowski, Brant W. Hager, Julie Lantz, and Michael A. Carducci.
- 1486 Identification and Characterization of A-105972, an Antineoplastic Agent.** Jinyun R. Wu-Wong, Jeffery D. Alder, Lisa Alder, David J. Burns, Edward K.H. Han, Bruce Credo, Stephen K. Tahir, Brian D. Dayton, Patricia J. Ewing, and William J. Chios.
- 1493 Pharmacological Inhibition of Fatty Acid Synthase Activity Produces Both Cytostatic and Cytotoxic Effects Modulated by p53.** Ji-Nong Li, Myriam Gorsepe, Francis J. Chrest, Tirukalukundram S. Kumaravel, Michele K. Evans, Wan Fang Han, and Ellen S. Pizer.
- 1500 The Level of MHC Class I Expression on Murine Adenocarcinoma Can Change the Antitumor Effector Mechanism of Immunocytotoxic Therapy.** Michael Imboden, Kristopher R. Murphy, Alexander L. Rakhmichev, Zane C. Neal, Rong Xiang, Ralph A. Reisfeld, Stephen D. Gillies, and Paul M. Sondel.
- 1508 p53 Modulates the Effect of Loss of DNA Mismatch Repair on the Sensitivity of Human Colon Cancer Cells to the Cytotoxic and Mutagenic Effects of Cisplatin.** Xinjun Lin, Krishnan Ramanamirthi, Msako Mishima, Akira Kondo, Randolph D. Christen, and Stephen B. Howell.
- 1517 Interferon-inducible Protein 10 Induction and Inhibition of Angiogenesis *In Vivo* by the Antitumor Agent 5,6-Dimethylxanthone-4-acetic Acid (DMXAA).** Zhihua Cao, Bruce C. Bagley, and Lai-Ming Ching.
- 1522 Methotrexate Accumulates to Sublethal Levels in Animals Transplanted with Normal versus Drug-resistant Transgenic Marrow.** Lalitha R. Belar, Debra Bork-Galvan, Michaela D. Diers, R. Scott McIvor, and Cheryl L. Zimmerman.
- 1527 Antitumor Activity of the Rapamycin Analog CCI-779 in Human Primitive Neuroectodermal Tumor/Medulloblastoma Models as Single Agent and in Combination Chemotherapy.** Birgit Geisberger, Karol Kert, Cheng-Bi Tang, Kai-Ming Fung, Bruce Powell, Leslie N. Sutton, Peter C. Phillips, and Anna J. Jans.
- 1533 Inhibition of Extracellular Signal-regulated Kinase (ERK) Mediates Cell Cycle Phase Independent Apoptosis in Vinblastine-treated ML-1 Cells.** Terence A. Stadheim, Helen Xiao, and Alan Eastman.
- 1541 Inhibition of Extracellular Signal-regulated Kinase 1/2 Phosphorylation and Induction of Apoptosis by Sulindac Metabolites.** Pamela L. Rice, Ryan J. Goldberg, Evan C. Ray, Linda J. Driggers, and Dennis J. Ahnen.
- 1548 Targeting a Genetically Engineered Elastin-like Polypeptide to Solid Tumors by Local Hyperthermia.** Dan E. Meyer, Garbarg A. Kong, Mark W. Dewhirst, Michael R. Zalutsky, and Ashutosh Chilkoti.
- 1555 Antibodies Elicited by Naked DNA Vaccination against the Complementary-determining Region 3 Hypervariable Region of Immunoglobulin Heavy Chain Idiotype Determinants of B-lymphoproliferative Disorders Specifically React with Patients' Tumor Cells.** Monica Rinaldi, Francesco Ria, Paola Partella, Emanuela Signori, Anna Serra, Silvia A. Clafis, Isabella Veppanani, Maria Lazzari, Maria Giulia Farace, Giuseppe Saglio, and Vito M. Fazio.
- 1563 Identification and Characterization of Protein, a Novel Prostate-specific Protein.** Jianchun Xu, Michael Kalos, John A. Stolk, Eden J. Zaslhoff, Xinqun Zhang, Raymond L. Houghton, Aristides Maltzer Filho, Marcos Nolasco, Roberto Badari, and Steven G. Reed.
- 1569 Gene Expression Patterns Associated with the Metastatic Phenotype in Rodent and Human Tumors.** Andrea Nesl, Oliver D. Von Stein, Kurt Zatlouask, Wolf-Gerolf Thies, Peter Herrlich, Martin Hofmann, and Jonathan P. Sleeman.
- 1578 Effect of Adenoviral Transduction of the Fragile Histidine Triad Gene into Esophageal Cancer Cells.** Hideaki Ishii, Kristoffel R. Dunson, Andrea Vecchiarelli, Francesco Trapasso, Koshi Minori, Hansjörg Alder, Hisaki Mori, Gabriella Sozzi, Raffaele Baffa, Kay Huebner, and Carlo M. Croce.
- 1585 End-jugency Deficiency and Radiosensitization Induced by Gemcitabine.** John W. G. van Putten, Harry J. M. Groen, Kees Smid, Godefridus J. Peters, and Harm H. Kampering.
- 1592 Transcriptional Activation of the Human HMG1 Gene in Cisplatin-resistant Human Cancer Cells.** Gunji Nagatani, Mitsuo Nomoto, Hiroshi Takano, Tomoko Ise, Ken Kato, Toshihiro Imamura, Hiroto Izumi, Kazumi Makishima, and Kimihito Kohno.
- 1598 A Possible Role of p73 on the Modulation of p53 Level through MDM2.** Xian Qi Wang, Weg M. Ongkeko, Anita W. S. Lau, Ka Man Leung, and Randy Y. C. Poon.
- 1604 Reversal-induced Activation of p53 and Apoptosis Is Mediated by Extracellular-Signal-regulated Protein Kinases and p38 Kinase.** Qing-Bai Shi, Ann M. Boske, Wei-Ya Ma, Nan-Yue Chen, and Zigang Dong.



- 1611 **Prostate Short-Chain Dehydrogenase Reductase 1 (PSDR1): A New Member of the Short-Chain Steroid Dehydrogenase/Reductase Family Highly Expressed in Normal and Neoplastic Prostate Epithelium.** Binyang Lin, James T. White, Camari Ferguson, Shanyu Wang, Robert Vesceles, Roger Bumgarner, Lawrence D. True, Leroy Hood, and Peter S. Nelson.

- 1619 **MSH6 and MSH3 Are Rarely Involved in Genetic Predisposition to Non-polyposis Colon Cancer.** Jiaqi Huang, Shannon A. Kuismanen, Tao Liu, Robert B. Chadwick, Cheryl K. Johnson, Michael W. Stevens, Samuel K. Richards, Julie E. Meek, Xin Guo, Fred A. Wright, Jukka-Pekka Mecklin, Heikki J. Järvinen, Henrik Grönberg, Marie Luise Bisgaard, Annika Lindholm, and Päivi Peltomäki.

- 1624 **Cancer-specific Genomic Instability in Bronchial Lavage: A Molecular Tool for Lung Cancer Detection.** Triantafyllou Liogkios, Paul Maloney, George Ntarmaras, Melanie Hubbert, Martin J. Walshaw, John R. Gossney, Lesley Turnbull, and John K. Field.

- 1629 **Templated Nucleotide Addition and Immunoglobulin J $\mu$ -Gene Utilization in B11.14 Junctions: Implications for the Mechanism of Translocation and the Origin of Mantle Cell Lymphoma.** Natascha Wetzel, Trang Le, Rodrigo Marcolleau, Gerlinde Mitterbauer, Andreas Chott, Christiane Pott, Michael Kiehn, Ming-Qing Du, Rajko Kosec, Johannes Drach, Markus Raderer, Christine Mannhalter, Klaus Lechner, Bertrand Nadel, and Ulrich Jaeger.

## Tumor Biology

- 1637 **Receptor Activator of Nuclear Factor  $\kappa$ B Ligand (RANKL) Is a Key Molecule of Osteoclast Formation for Bone Metastasis in a Newly Developed Model of Human Neuroblastoma.** Toshimi Michigami, Miyuki Hara-Watanabe, Miwa Yamazaki, and Keisichi Ozono.

- 1645 **Anticancer Agents Sensitize Tumor Cells to Tumor Necrosis Factor-related Apoptosis-inducing Ligand-mediated Caspase-8 Activation and Apoptosis.** Sandrine Lacour, Arlette Hammann, Anne Wotawa, Laurent Corcos, Eric Solary, and Marie-Thérèse Dauter-Boulet.

- 1652 **Identification of CGA as a Novel Estrogen Receptor-responsive Gene in Breast Cancer: An Outstanding Candidate Marker to Predict the Response to Endocrine Therapy.** Ivan Bieche, Béatrice Parfait, Vivianne Le Doussal, Martine Olivi, Marie-Christine Rio, Rosette Lallereau, and Michel Vidaud.

## Advances in Brief

- 1765 **Breast Cancer Metastatic Potential Correlates with a Breakdown in Homeostatic and Homeostatic Gap Junctional Intercellular Communication.** Marne M. Saunders, M. Jabel Sater, Zhongyong Li, Zhiyi Zhou, Cathy R. Winer, Danny R. Welch, and Henry J. Donahue.

- 1768 **The 104–123 Amino Acid Sequence of the  $\beta$ -domain of von Hippel-Lindau Gene Product Is Sufficient to Inhibit Renal Tumor Growth and Invasion.** Kaushik Datta, Christian Sandberg, S. Ananth Karamanchi, and Debabrata Mukhopadhyay.

- 1776 **Suppression of a Squamous Cell Carcinoma (SCC)-related Serpin, SCC Antigen, Inhibits Tumor Growth with Increased Intratumoral Infiltration of Natural Killer Cells.** Yoshinori Sumitani, Shigeki Nagashima, Akhiro Murakami, Shogo Nakata, Toshiyuki Gondo, Hiroshi Hirakawa, Fumitaka Numa, Gary A. Silverman, and Hiroshi Kato.

- 1781 **Noninvasive Imaging of  $\alpha_v\beta_3$  Integrin Expression Using <sup>18</sup>F-labeled RGD-containing Glycopeptide and Positron Emission Tomography.** Roland Hasbner, Hans-Jürgen Wester, Wolfgang A. Weber, Christian Mang, Sibylle L. Ziegler, Simon L. Goodman, Reinhard Senekowitsch-Schmidke, Heide Keweler, and Markus Schweiger.

- 1786 **Vascular Endothelial Growth Factor C Promotes Tumor Lymphangiogenesis and Intratumoral Tumor Growth.** Terhi Karpanen, Mikala Egeblad, Marika J. Karkkainen, Hajime Kubo, Seppo Vliet-Hernandez, Marja Jäntelä, and Kari Alitalo.

- 1791 **Silica-induced Activation of c-Jun-NH<sub>2</sub>-Terminal Kinase Kinases, Protracted Expression of the Activator Protein 1 Protein-Oxidative, J $\mu$ -J, and S-Phase Alterations Are Mediated via Oxidative Stress.** Arati Shukla, Cynthia R. Timblin, Andrea K. Hubbard, Jonathan Bravman, and Brooke T. Mossman.

- 1796 **Adenovirus Expressing RIZ1 in Tumor Suppressor Gene Therapy of Microsatellite-unstable Colorectal Cancers.** Guang-Liang Jiang and Shi Huang.

- 1799 **Geldanamycin and Its Analogue 17-Allylamino-17-demethoxygeldanamycin Lowers Bcr-Abl Levels and Induces Apoptosis and Differentiation of Bcr-Abl-positive Human Leukemic Blasts.** Ramadani Numanquall, Erica O'Bryan, and Kapil Bhalla.

- 1805 **Protease Pretreatment Increases the Efficacy of Adenovirus-mediated Gene Therapy for the Treatment of an Experimental Glioblastoma Model.** Nagao Koriyama, Hiroko Koriyama, Carol M. Jaffe, Kathleen R. Lamborn, and Mark A. Israel.

- 1810 **Prolinase Oxidase, Encoded by p53-induced Gene-6, Catalyzes the Generation of Proline-dependent Reactive Oxygen Species.** Steven P. Donald, Xiao-Ya Sun, Chen-An A. Hu, Jian Yu, Jay M. Mei, David Valle, and James M. Plung.

- 1816 **Tumorigenic Effect of Nonfunctional p53 or p21 in Mice Mutant in the Werner Syndrome Helicase.** Michel Lebel, Robert D. Cardiff, and Philip Leder.

- 1820 **Elevated Breast Cancer Risk in Irradiated BALB/c Mice Associates with Unique Functional Polymorphism of the *Pink1* (DNA-dependent Protein Kinase Catalytic Subunit) Gene.** Yongyong Yu, Ryosuke Okazaki, Michael M. Weil, Andy Silver, Margaret McCarthy, Ryan Zabnicki, Scott Long, Roger Cox, and Robert L. Ulrich.

- 1825 **Gene Expression Profiling with Oligonucleotide Microarrays Distinguishes World Health Organization Grade of Oligodendrogliomas.** Mark A. Watson, Aric Perry, Vikram Badhary, Chindo Hicks, William D. Shuman, and Keith M. Rich.

- 1830 **Hypoxia Inducible Factor (HIF-1 $\alpha$  and HIF-2 $\alpha$ ) Expression in Early Esophageal Cancer and Response to Photodynamic Therapy and Radiotherapy.** Michael J. Kozlowski, Alexander Giatromanolaki, John Skarlatos, Luigi Corti, Stella Blandamura, Mario Piazza, Kevin C. Gatter, and Adrian L. Harris.

- 1659 **DNA Fragments in the Blood Plasma of Cancer Patients: Quantitations and Evidence for Their Origin from Apoptotic and Necrotic Cells.** Sabine Jaki, Hannes Hentze, Sabine Englisch, Dieter Harth, Frank O. Fackelmayr, Rolf-Dietrich Hesch, and Rolf Knappe.

- 1666 **Prognostic Significance of Polysialic Acid Expression in Resected Non-Small Cell Lung Cancer.** Fumihito Tanaka, Yosuke Otake, Tetsuo Nakagawa, Yozo Kawano, Ryo Miyahara, Mio Ito, Kazuhito Yanagihara, Kenji Inui, Hiroki Oyanagi, Tomoko Yamada, Jun Nakayama, Ichiro Fujimoto, Kazuhito Ikemura, and Hiroshi Wada.

- 1671 **Geldanamycin Abrogates ErbB2 Association with Proteasome-resistant  $\beta$ -Catenin in Melanoma Cells, Increases  $\beta$ -Catenin-E-Cadherin Association, and Decreases  $\beta$ -Catenin-sensitive Transcription.** Paolo Bonvini, Won G. An, Angelo Rosolen, Phommai Nguyen, Jane Treppel, Antonio Garcia de Herreros, Mircea Danuch, and Leonard M. Neckers.

- 1678 **Identification of Genes Involved in Human Urothelial Cell-Matrix Interactions: Implications for the Progression Pathways of Malignant Urothelium.** Barbara A. Smith, Wendy J. Kennedy, Patricia Harnden, Peter J. Selby, Ludwik K. Tregosz, and Jennifer Southgate.

- 1686 **Catalytic Cleavage of the Androgen-regulated TMPRSS2 Protease Results in Its Secretion by Prostate and Prostate Cancer Epithelia.** Daniel E. H. Afari, Igor Vivianco, Rene S. Habert, James Ko, Emily Chen, Douglas C. Salzar, Arthur B. Rattinas, and Aya Jakobovits.

- 1693 **Drug Resistance Induced by Onabain via the Stimulation of *MDR1* Gene Expression in Human Carcinomatous Pulmonary Cells.** Franck Brouillard, Daniel Tondelier, Aleksandra Edelman, and Maryvonne Baudouin-Legros.

- 1699 **Overexpression of BCL-2 $\gamma$  Underlies the Molecular Basis for Resistance to Staurosporine-induced Apoptosis in PC-3 Cells.** Xiao-Ying Li, Michela Marini, Roberto Mammucari, Berna Kinsley, Francesca Andriani, Ildo Nicoletti, Larry Denner, and Marco Marcelli.

- 1707 **Androgen and Metastatic Potential of Chondrosarcoma S91 Melanoma Cells.** Zhenyu Zhu, Otto Sanchez-Sweatman, Xiaojun Huang, Robert Willmott, Rama Khoshdel, Qun Zhao, and Eliseo Goren.

- 1717 **Inhibition of Fibroblast Growth Factor/Fibroblast Growth Factor Receptor Activity in Glioma Cells Impedes Tumor Growth by Both Angiogenesis-dependent and -independent Mechanisms.** Patrick Auguste, Daniela B. Gansel, Sylvie Lemière, Diana Reimers, Pedro Cuevas, Fernando Cacerel, James P. Di Santo, and Andrea Birkfeld.

## March 1, Number 5

- 1833 **Invasion-specific Genes in Malignancy: Serial Analysis of Gene Expression Comparisons of Primary and Passaged Cancers.** Byungwoo Ryu, Jesse Jones, Michael A. Hollingsworth, Ralph H. Hruban, and Scott E. Kern.

- 1837 **Aberrant Expression of HDIM Proteins in Tumor Cells Correlates with Wild-Type p53.** Yolande F. M. Ramos, Robert Stoll, Joline Attama, Lucy T. C. Peltenberg, Alex J. van der Eb, and Aart G. Jochemsen.

- 1843 **Somatic Mutation of Mitochondrial DNA in Cancers and Noncancerous Liver Tissue in Individuals with Hepatocellular Carcinoma.** Manabu Nishikawa, Shuhei Nishiguchi, Susumu Shimizu, Akhiro Tamori, Norihiro Kish, Tadashi Takeda, Shoji Kubo, Karuhito Hirohata, Hiroaki Kinoshita, Eisuke Sato, and Masayasu Inoue.

- 1846 **Target Cell-restricted Triggering of the CD95 (APO-1/Fas) Death Receptor with Bisppecific Antibody Fragments.** Gerdhard Jung, Ludger Grosse-Horvath, Peter H. Kramer, and Hans-Georg Rammensee.

## Regular Articles

### Biochemistry and Biophysics

- 1849 **Increased Oxidative Stress in Ataxia Telangiectasia Evidenced by Alterations in Redox State of Brain from Atax-deficient Mice.** Ariel Kammer, Dorah Dali, Ayala Hochman, Nora Stern, Yosef Shalit, Galit Rotman, and Avi Barzilai.

- 1855 **Phosphatidylinositol 3-Kinase Activity in Epidermal Growth Factor-stimulated Matrix Metalloproteinase-9 Production and Cell Surface Association.** Shawa M. Ellerbroek, Jennifer M. Hallberg, Maria Benavides, Janet K. Warnick, Elizabeth V. Watenberg, M. Sharon Stack, and Laurie G. Hudson.

- 1862 **XIAP Regulates Akt Activity and Caspase-3-dependent Cleavage during Clopidin-induced Apoptosis in Human Ovarian Epithelial Cancer Cells.** Eric Asolin, Gordon B. Mills, and Benjamin K. Tsang.

- 1869 **Rapid Release of Intracellular Galectin-3 from Breast Carcinoma Cells by Fetuin.** Wen-Qin Zhu and Jinhua Ochieng.

### Carcinogenesis

- 1874 **Sequential Analysis of Morphological and Biological Properties of  $\beta$ -Catenin-accumulated Crypts: Proliferative Proliferating Lesions Induced by Aberrant Crypt Foci in Rat Colon Carcinogenesis.** Yasuhito Yamada, Naoki Yoshimori, Yoshinori Hosono, Kenji Matsuyama, Masaki Katayama, Keiko Sakata, Masahito Shimizu, Toshiyuki Kato, and Hidetoshi Mori.

- 1879 **A Clonal Growth Model: Time-course Simulations of Liver Foci Growth following Penta- or Hexachlorobenzene Treatment in a Medium-term Bioassay.** Ying C. Ou, Rory B. Connolly, Russell S. Thomas, Yihua Xu, Melvin E. Andersen, Laura S. Chubb, Henry C. Pitt, and Raymond S. H. Yang.

### Clinical Investigations

- 1890 **erbB2 Overexpression on Occult Metastatic Cells in Bone Marrow Predicts Poor Clinical Outcome of Stage I-III Breast Cancer Patients.** Stephan Braun, Günter Schlimm, Isabella Hennen, Gerhard Schaller, Lutz Riethmüller, Gert Riethmüller, and Klaus Pantel.

- 1896 **Heterogeneous Nuclear Ribonucleoprotein B1 as Early Cancer Biomarker for Occult Cancer of Human Lung and Bronchial Dysplasia.** Eschuro Saezka, Naoko Sueoka, Yori Goto, Satoru Matsuyama, Hiroshi Nishimura, Masami Sato, Shigeru Fujimura, Hiroshi Chiba, and Hiroshi Fujiki.

- 1903 **Key Importance of the Helicobacter pylori Adherence Factor Blood Group Antigen Binding Adhesin during Chronic Gastric Inflammation.** Christian Pütz, Martin Schöngauer, Roland Rall, Ingrid Becker, Erwin Kridisch, Stephan Wagonfeld, Meinhard Clasen, Thomas Rott, Wolfgang Schepp, and Markus Gerhard.

- 1727 **Up-Regulation of Vascular Endothelial Growth Factor in Breast Cancer Cells by the Heregulin- $\beta$ 1-activated p38 Signaling Pathway Enhances Endothelial Cell Migration.** Shunbin Xiong, Rebecca Grigoriu, Lianhang Zhang, Nina T. Nguyen, Peter W. Posters, Raphael E. Pollock, and Dhanu Yu.

- 1733 **Chemoprevention of Intestinal Polyps in the Apc<sup>+/316</sup> Mouse by Rofenox, a Specific Cyclooxygenase-2 Inhibitor.** Masahiko Oshima, Naemi Murai-Hatai, Stacia Kargman, Merit Argüelles, Pauline Luk, Elizabeth Kwong, Makoto M. Takeuchi, and Jilly F. Evans.

- 1741 **Mechanism of Functional Inactivation of a Li-Fraumeni Syndrome p53 that Has a Mutation Outside of the DNA-binding Domain.** Jije Gu, Hidehiko Kawai, Dominik Wiedersheim, and Zhu-Min Yuan.

- 1747 **A Novel Serine-dependent Proteolytic Activity Is Responsible for Truncated Signal Transducer and Activator of Transcription Proteins in Acute Myeloid Leukemia Blasts.** Zheng Xiu, Robert R. Salzer, Daniel P. Konz, Maria R. Baer, Latif Kazim, Heinz Baumann, and Meir Wetzler.

## Virology

- 1754 **Identification of a Proviral Structure in Human Breast Cancer.** Binglin Liu, Yue Wang, Stella M. Melina, Isabelle Pelsson, Vesna Najfeld, James F. Holland, and Beatriz G-T. Pogos.

## 1760 Announcements

- 2001 Annual Meeting  
Future Annual Meetings of the American Association for Cancer Research  
Late-breaking Research Session at the Annual Meeting  
Workshop on Pathobiology of Cancer  
Workshop on Molecular Biology in Clinical Oncology  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## 1765 Author Index

## Endocrinology

- 1910 **Overexpression of Aromatase Leads to Hyperplasia and Changes in the Expression of Genes Involved in Apoptosis, Cell Cycle, Growth, and Tumor Suppressor Functions in the Mammary Glands of Transgenic Mice.** Nasser Kirm, Kiran Gill, Usha Mandava, and Rajeshwar Rao Tekmal.

- 1919 **Evaluation of Androgen, Estrogen (*ER* and *ER $\beta$* ), and Progesterone Receptor Expression in Human Prostate Cancer by Real-Time Quantitative Reverse Transcription-Polymerase Chain Reaction Assays.** Alan Lail, Ivan Bieche, Dominique Vidaud, Rosette Lallereau, Philippe Berthoin, Olivier Cussenot, and Michel Vidaud.

## Epidemiology and Prevention

- 1927 **Modulation of Experimental Colon Tumorigenesis by Types and Amounts of Dietary Fatty Acids.** Chonthalaphy V. Rao, Yoshinobu Hirao, Cosma Indranci, and Bandaru S. Reddy.

- 1934 **Human Papillomavirus 16 and 18 L1 Serology Compared across Anogenital Cancer Sites.** Joseph J. Carter, Margaret M. Madeleine, Katherine Shera, Stephen M. Schwartz, Kara L. Cushing-Haugen, Gregory C. Wipf, Peggy Potter, Janet R. Daling, James K. McDougall, and Denise A. Galloway.

## Experimental Therapeutics

- 1941 **Localization of a Human Reduced Folate Carrier Protein in the Mitochondrial as Well as the Cell Membrane of Leukemia Cells.** Tanya M. Trippett, Shweta Garcia, Katta Manava, Roshi Modi, Leona Cohen-Gold, Wayne Flinnoff, and Joseph R. Bertino.

- 1948 **Vascular Attack by 5 $\alpha$ -Dimethylxanthone-4-acetic Acid Combined with B7.1 (CD80)-mediated Immunotherapy Overcomes Immune Resistance and Leads to the Eradication of Large Tumors and Multiple Tumor Foci.** Jagat R. Kanwar, Rappinder K. Kanwar, Shashi Pandey, Lai-Ming Ching, and Geoffrey W. Krichevsky.

- 1957 **p53 Effects Both the Duration of G<sub>2</sub>M Arrest and the Fate of Temozolomide-treated Human Glioblastoma Cells.** Yuichi Hinoe, Michael S. Berger, and Russell O. Pieper.

- 1964 **Characterization of a Novel Topoisomerase I Mutation from a Camptothecin-resistant Human Prostate Cancer Cell Line.** Yoshinobu Utsuki, Gary S. Lachs, Philippe Pouspigner, Yaji Takayoshi, Glenda Kolhagen, Christopher Gifford, Hongliang Zhang, Devasis Chatterjee, Panayotis Pantazis, and Yves Pommier.

- 1970 **Targeting of Aluminum (III) Phthalocyanine Tetrasulfonate by Use of Immunolabelled Monoclonal Antibodies: Improved Efficacy in Photodynamic Therapy.** Maarten B. Vroessens, Gerard W.M. Visser, Marjole Stigter, Hugo Oppelaar, Gordon B. Snow, and Gaus A.M.S. van Dongen.

- 1976 **T-Cell Activation by Recombinant Receptors: CD28 Costimulation Is Required for Interleukin 2 Secretion and Receptor-mediated T-Cell Proliferation but Does Not Affect Receptor-mediated Target Cell Lysis.** Andreas Hombach, Dagmar Sont, Claudia Schneider, Claudia Heuser, Dimitra Koch, Christoph Pohl, Barbara Seliger, and Hinrich Abken.

- 1983 **Pharmacological and Toxicological Aspects of 4-Demethoxy-3'-deamino-3'-aziridinyl-4'-methylsulphonyl-dauerubicin (PNU-159548): A Novel Antineoplastic Agent.** Cristina Geronzi, Maria Ripamonti, Claudio Argnani, Francesco Fiorentini, Laura Capolongo, Donatella Monetti, Sergio Damia, Paola Della Torre, Carla Lippone, Maria Grazia Lamparelli, Marina Comeri, Rosaria Rossi, and Michele Caruso.

- 1991 **4-Demethoxy-3'-deamino-3'-aziridinyl-4'-methylsulphonyl-dauerubicin (PNU-159548): A Novel Anticancer Agent Active against Tumor Cell Lines with Different Resistance Mechanisms.** Sergio Marchini, Giovanni Damia, Massimo Brogini, Giulia Pennella, Marina Ripamonti, Aurelio Maraglio, and Cristina Geronzi.

- 1996 Experimental Chemotherapy of Mouse Mammary Adenocarcinoma MA13C with Docetaxel and Doxorubicin as Single Agents and in Combination. T. G. Grandis, E. Filipak, R. M. D'Atino, P. Vignaud, A. Anjo, M. C. Bissery, and F. Lévi.

- 2002 Effects of Chemotherapy by 1,3-Bis(2-chloroethyl)-1-nitrosourea on Single-Quantum- and Triple-Quantum-filtered  $^{13}\text{C}$  and  $^{31}\text{P}$  Nuclear Magnetic Resonance of the Subcutaneously Implanted 9L Glioma. Patrick M. Winter, Harsh Popanti, and Navin Bansal.

- 2008 Response of LNCaP Spheroids after Treatment with an  $\alpha$ -Particle Emitter  $^{213}\text{Bi}$ -labeled Anti-Prostate-specific Membrane Antigen Antibody (JSP1). A. M. Bullangrud, Wei-Hong Yang, David E. Chalkin, Michael R. DeVitt, Klaus A. Hantscher, Katherine S. Panagias, Dingshe Ma, Neil H. Bander, David A. Scheinberg, and George Sgouras.

## Immunology

- 2015 Vascular Endothelial Growth Factor Effects on Nuclear Factor- $\kappa\text{B}$  Activation in Hematopoietic Progenitor Cells. Mikhail M. Dikov, Tsuchiko Oyama, Pingyan Cheng, Takahashi, Keiko Takahashi, Tanya Septevay, Byard Edwards, Yasushi Adachi, Seneca Nadaf, Thomas Daniel, Dmitry I. Gavriliovich, and David P. Carbone.

- 2022 Stimulation of  $\beta_1$  Integrin Down-Regulates ICAM-1 Expression and ICAM-1-dependent Adhesion of Lung Cancer Cells through Focal Adhesion Kinase. Manabu Yasuda, Yoshio Tanaka, Masahito Tamura, Koichi Fujii, Masakazu Sugaya, Tomoko So, Mitsuhiro Takemura, and Kosei Yasumoto.

- 2031 Divergent Effects of 4-1BB Antibodies on Antitumor Immunity and on Tumor-reactive T-Cell Generation. Julian A. Kim, Bruce J. Averbeck, Kathleen Chambers, Kevin Rothchild, Jorgen Kjaergaard, Robert Papay, and Suya Shu.

- 2038 Molecular Basis of T Cell-mediated Recognition of Pancreatic Cancer Cells. Masaki Ito, Shigeki Shiohira, Naotake Tsuda, Mika Ohi, Nanae Harashina, Norio Saito, and Kyogo Itoh.

- 2047 Melanoma Patients Respond to a Cytotoxic T Lymphocyte-defined Self-Peptide with Diverse and Nonoverlapping T-Cell Receptor Repertoires. Pierre-Yves Dietrich, Paul R. Walker, Anne-Lise Quarez, Gaëlle Perrin, Valérie Dantot, Danielle Lévesque, Philippe Guillaume, Jean-Charles Corotini, Pedro Romero, and Daniela Valmorci.

- 2055 Identification of a Tissue-specific Putative Transcription Factor in Breast Tissue by Serological Screening of a Breast Cancer Library. Dina Jager, Elisabeth Stockert, Ali G. Güne, Matthew J. Scanlan, Julia Karbach, Elke Jager, Alexander Knuth, Lloyd J. Old, and Yao-Tseng Chen.

- 2062 T Cell-dependent Antitumor Immunity Mediated by Secondary Lymphoid Tissue Chemokine: Augmentation of Dendritic Cell-based Immunotherapy. Christopher J. Kirk, Dennis Hartigan-O'Connor, Brian J. Nickoloff, Jeffrey S. Chamberlain, Martin Giedlin, Lea Aukerman, and James J. Mule.

## Molecular Biology and Genetics

- 2071 Regulation of Growth and Tumorigenicity of Breast Cancer Cells by the Low Molecular Weight GTPase Rac and N-myc. Yu-Hua Tseng, David Vicent, Jianhua Zhu, Yulian Niu, Adewale Adeyinka, Julie S. Meyers, Peter H. Watson, and C. Ronald Kahn.

- 2080 Oct-2 and Bob-1 Deficiency in Hodgkin and Reed Sternberg Cells. Daniel Re, Markus Mitschen, Tahamtan Ahmadi, Claudia Wickenhauser, Andrea Staratschek-Jox, Udo Holthoff, Volker Diehl, and Jürgen Wolf.

- 2085 Activation of  $\beta$ -Catenin during Hepatocarcinogenesis in Transgenic Mouse Models: Relationship to Phenotype and Tumor Grade. Diego F. Calvisi, Valentina M. Factor, Roberto Lot, and Sirois S. Thorgerison.

- 2092 Increased Loss of Chromosome 9p21 but not p16 Inactivation in Primary Non-Small Cell Lung Cancer from Smokers. Montserrat Sanchez-Cespedes, P. Anthony Decker, Kara M. Doffek, Manel Esteller, William H. Westra, Enas A. Alawi, James G. Herman, Michael J. Denmeure, David Sidransky, and Steven A. Ahrendt.

- 2097 Stabilized  $\beta$ -Catenin Immobilizes Colonic Epithelial Cells. Rebecca A. Wagenaar, Howard C. Crawford, and Lynn M. Matrisian.
- 2105 PTEN-induced G<sub>1</sub> Growth Arrest Requires p27<sup>Kip1</sup>. Alexander R. Gottschalk, Daniel Basila, Michelle Wong, Nicholas M. Dean, Christian H. Brando, David Stokoe, and Daphne A. Haas-Kogan.

- 2112 SMAD3 Represses Androgen Receptor-mediated Transcription. Steven A. Hayes, Mark Zarnegar, Manju Sharma, Fujian Yang, Donna M. Peeth, Peter ten Dijke, and Zijie Sun.

- 2119 Mapping the Sites of Putative Tumor Suppressor Genes at 6p25 and 6p21.3 in Cervical Carcinoma: Occurrence of Allelic Deletions in Precancerous Lesions. Anupam Chatterjee, Hugo Arias-Pulido, Sanjay Koul, Nestor Belchis, Ana Perilla, Hector Posso, Mahesh Manuakham, and Vandavalli V. V. S. Murty.

- 2124 Microsatellite Instability Occurs in Distinct Subtypes of Polypoid but not Adul Central Nervous System Tumors. Michelle Alonso, Richard Handelin, Mimi Kim, Kara Porwancher, Tammy Sung, Preeti Parhar, Douglas C. Miller, and Elizabeth W. Newcomb.

- 2129 Genome-wide Analysis of Gene Expression in Human Hepatocellular Carcinomas Using cDNA Microarray: Identification of Genes Involved in Viral Carcinogenesis and Tumor Progression. Hiroshi Okabe, Seiji Satoh, Tatsuhiko Kato, Osamu Kitahara, Rongyi Yang, Yoshio Yamaoka, Tatsuhiko Tsunoda, Yoichi Furukawa, and Yusuke Nakamura.

## Tumor Biology

- 2138 Expression of Vesicular Monoamine Transporters, Synaptosomal-associated Protein 25 and Synaptobrevin 2 in Human Small Cell Lung Carcinomas. Lothar Graff, Florian Gostrop, Markus Bauer, Heinz Höfler, and Manfred Gratzl.

- 2145 Angiopoietin-2 Is Related to Tumor Angiogenesis in Gastric Carcinoma: Possible *In Vivo* Regulation by Induction of Protrases. Tetsuhiro Etoh, Hiroshi Inoue, Shigeo Tanaka, Graham F. Burnard, Seigo Kitano, and Masaki Mori.

- 2154 HuR, a RNA Stability Factor, Is Expressed in Malignant Brain Tumors and Binds to Adenine- and Uracil-rich Elements within the 3' Untranslated Regions of Cytokine and Angiogenic Factor mRNAs. L. Burt Nabors, G. Yancy Gillespie, Laubhart Harkins, and Peter H. King.

- 2162 The Gene for the Axonal Cell Adhesion Molecule TAX-1 Is Amplified and Aberrantly Expressed in Malignant Gliomas. David S. Rickman, Rachana Tyagi, Xiao-Xiang Zhu, Miroslav P. Bobek, Susan Song, Mila Blazyn, David E. Misk, Mark A. Israel, David M. Kurnit, Donald A. Ross, Phillip E. Kish, and Samir M. Hanash.

- 2169 Expression of erbB-4/HER-4 Growth Factor Receptor Isoforms in Ovarian Cancer. Lynn M. R. Gilmore, Kenneth G. Macdonald, Alison McCaig, William J. Gullick, John F. Smyth, and Simon P. Langdon.

- 2177 Establishment of a Novel Specific- and Tissue-specific Metastasis Model of Human Prostate Cancer in Humanized Non-Obese Diabetic/Severe Combined Immunodeficient Mice Engrafted with Human Adult Lung and Bone. Hironori Yoneda, Tomoyuki Yokota, Tomoyuki Kamigai, Naoki Kanomata, Takahito Hasebe, Kanaji Nagai, Tadashi Hatan, Yoshihide Ogawa, and Atsushi Ochiai.

- 2183 Up-Regulation of Bcl-2 in Microvascular Endothelial Cells Enhances Intratumor Angiogenesis and Accelerates Tumor Growth. Jacques E. Nix, Jean Christensen, Jueqiao Liu, Martin Peters, David J. Mooney, Robert M. Strieter, and Peter J. Polverini.

- 2189 High Cancer Cell Death in Syngeneic Tumors Developed in Host Mice Deficient for the Stromelysin-3 Matrix Metalloproteinase. Anne Boulay, Régis Masson, Marie-Pierre Chénier, Mostapha El Fahime, Lydie Cossard, Jean-Pierre Bellocq, Catherine Sautès-Fridman, Paul Basset, and Marie-Christine Rio.

- 2194 Role of Phosphatidylinositol 3-Kinase-Akt Pathway in Nucleophosmin/Anaplastic Lymphoma Kinase-mediated Tumorigenesis. Artur Slipek, Margaret Niekoszewska-Skorska, Grazyna Hoser, Andrea Morione, Miroslaw Majewski, Liqian Xue, Stephan W. Morris, Mariusz A. Wasik, and Tomasz Skorski.

- 2200 Aberrant Activation of c-Myc Protects Colon Carcinoma Cells against Apoptosis and Enhances Their Invasive Potential. Grazia Bellone, Anna Carbone, Nadia Sibona, Ornella Bosco, Daniela Tibaudi, Carlo Simeone, Tiziana Martone, Claudia Gramigni, Michele Camandona, Giorgio Emanuelli, and Ulrich Rödel.

- 2207 Radiation Therapy to a Primary Tumor Accelerates Metastatic Growth in Mice. Kevin Camphansen, Marsha A. Moses, Wolf-Dietrich Becken, Mohamed K. Khan, Judah Folkman, and Michael S. O'Reilly.

- 2212 Centrosome Defects Can Account for Cellular and Genetic Changes That Characterize Prostate Cancer Progression. German A. Pihan, Anna Parschi, Janice Wallace, Raji Mathur, Liane Lietz, and Stephen J. Dosskey.

- 2220 Altered Expression of Apc/161 in Germ Cell Tumors and Overexpression in NT2 Cells Confers Resistance to Bleomycin and Radiation. Kent A. Robertson, Heather A. Bullock, Yi Xia, Renee Tini, Erika Zimmermann, Thomas M. Ulbright, Richard S. Foster, Lawrence H. Einhorn, and Mark R. Kelley.

- 2226 Clinicopathological Significance of Core 2  $\beta$ 1A-N-Acetylglucosaminyltransferase Messenger RNA Expressed in the Pulmonary Adenocarcinoma Determined by *in Situ* Hybridization. Emi Machida, Jun Nakayama, Jun Amano, and Minoru Fukuda.

- 2232 Inhibition of Angiogenesis and Tumor Growth by SCH221513, a Dual  $\alpha_1\beta_1$  and  $\alpha_2\beta_2$  Integrin Receptor Antagonist. C. Chandra Kumar, Michael Makowski, Zohang Yin, Elena Tang, Bo Yarmarko, Terry Neuchatz, Judy Varner, Ming Liu, Elizabeth M. Smith, Bernice Neustadt, Marco Presta, and Lydia Armstrong.

- 2239 A Probasin-Large T Antigen Transgenic Mouse Line Develops Prostate Adenocarcinoma and Neuroendocrine Carcinoma with Metastatic Potential. Nanyu Masumori, Tatsu Z. Thomas, Pierre Charrand, Tom Cose, Mark Paul, Susan Kasper, Richard M. Caprioli, Taji Tsukamoto, Scott B. Shappell, and Robert J. Matsuk.

- 2245 Stimulation of Mammalian Tumorigenesis by Systemic Tissue Inhibitor of Metalloproteinase-4 Gene Delivery. Yangfeng Jiang, Mingcheng Wang, Mahmut Y. Celikler, Yiliang E. Liu, Qing Xiang, Amy Sang, Ishak D. Goldberg, and Y. Eric Shi.

- 2271 Patterns of CDKN2A Gene Loss in Sequential Oral Epithelial Dysplasias and Carcinomas. S. Ali Shahnavaz, Grace Bradley, Joseph A. Regezi, Nalin Thakker, Lushan Gao, David Hogg, and Richard C. K. Jordan.

- 2276 A Novel Alternative Approach for Prediction of Radiation Response of Squamous Cell Carcinoma of Head and Neck. Dhab Hamra, Dennis C. Shreve, Vaneerat Ratanathurathorn, Xueqing Xia, Randy Breau, James Suen, and Shulin Li.

- 2281 A Case-Control Study of Microsomal Epoxide Hydrolase, Smoking, Meat Consumption, Glutathione S-Transferase M3, and Risk of Colorectal Adenomas. Victoria Cortes, Kimberly Siegmund, Quixiong Chen, Niaman Zhou, Ash Diep, Harold Frankel, Eric Lee, Qin-shi Zhu, Robert Hale, and Daniel Levy.

- 2286 Protection of Mice against Leukemia after Vaccination with Bone Marrow-derived Dendritic Cells Loaded with Apoptotic Leukemia Cells. Sophie Pascreau, Simone Branger, Jean-Loup Salzmann, David Klitzmann, and Bruno M. Colombo.

- 2290 Activated in Prostate Cancer: A PDZ Domain-containing Protein Highly Expressed in Human Primary Prostate Tumors. Hassan Chaik, Mark A. Rubin, Neil R. Mucci, Lang Li, Jeremy M. G. Taylor, Mark L. Day, John S. Rhim, and Jill A. Macoska.

- 2295 Intestinal Microflora Are Necessary for Development of Spontaneous Adenocarcinoma of the Large Intestine in T-Cell Receptor  $\beta$  Chain and p53 Double-Knockout Mice. Shouichi Kado, Kazumi Uchida, Hideyuki Funahashi, Shin Iwata, Yuriko Nagata, Minoru Ando, Masaharu Onoue, Yoshiaki Matsuo, Makoto Ohwaki, and Masami Morimoto.

- 2250 Tumor Necrosis Factor  $\alpha$  and Interleukin 11 Secreted by Malignant Breast Epithelial Cells Inhibit Adipocyte Differentiation by Selectively Down-Regulating CCAAT/Enhancer Binding Protein  $\alpha$  and Peroxisome Proliferator-activated Receptor  $\gamma$ : Mechanism of Desmoplastic Reaction. Li Meng, Jianfeng Zhou, Hirohito Sasano, Takashi Suzuki, Khalid M. Zeinoun, and Sendar E. Bulun.

- 2256 The Expression of Vascular Endothelial Growth Factor Correlates with Mutant p53 and Poor Prognosis in Human Breast Cancer. Barro K. Linderholm, Thomas Lindahl, Lars Holmberg, Sigrid Klar, Johan Lennstrand, Roger Henriksson, and Jonas Bergh.

- 2261 Impaired  $\alpha$ -Interferon Signaling in Transitional Cell Carcinoma: Lack of p48 Expression in 5637 Cells. Surena F. Main, Raymond R. Rackley, Prakash C. Sathukhan, Myung S. Kim, Andrew C. Novick, and Sudip K. Bandyopadhyay.

- 2267 Induction of ETS-1 and ETS-2 Transcription Factors Is Required for Thyroid Cell Transformation. Filomena de Nigris, Tiziana Mega, Nicole Berger, Maria Vittoria Barone, Massimo Samorè, Giuseppe Vignetto, Pasquale Verde, and Alfredo Fusco.

- 2276 Regulation of MMP-1 and MMP-2 Production through CD147/Extracellular Matrix Metalloproteinase Inducer Interactions. Jianxin Sun and Martin E. Hemler.

- 2282 Parathyroid Hormone-related Protein Induces Interleukin 8 Production by Prostate Cancer Cells via a Novel Intracellular Mechanism Not Mediated by Its Classical Nuclear Localization Sequence. Anetta Gujral, Douglas W. Burton, Robert Terkelhauf, and Leonard J. Delfos.

- 2289 The Farnesyltransferase Inhibitor L744832 Reduces Hypoxia in Tumors Expressing Activated H-ras. Elizabeth Cohen-Jonathan, Sydney M. Evans, Cameron J. Koch, Ruth J. Muschel, W. Gillies McKenna, JunMin Wu, and Eric J. Bernstein.

- 2294 Cystemine Induces Redifferentiation of Primary Tumors and Confers Protection against Secondary Tumor Growth in a Melanoma Murine Model. Aicha Demidant, Daniel Morvan, Janine Papon, Monique De Latour, and Jean Claude Maudmont.

- 2301 EphA2 Overexpression Causes Tumorigenesis of Mammary Epithelial Cells. Daniel P. Zelinski, Nicole Dodge Zantek, Jane C. Stewart, Armando R. Irtzary, and Michael S. Kinch.

- 2302 Distribution and Functional Consequences of Nucleotide Polymorphisms in the 3'-Untranslated Region of the Human *Sept15* Gene. Ya Jun Hu, Konstantin V. Korotkov, Rajeshwari Mehta, Delip L. Harfield, Charles N. Rotimi, Amy Luke, T. Elaine Presant, Richard S. Cooper, Wendy Stock, Everett E. Vokes, M. Eileen Dolan, Vadim N. Gladyshev, and Alan M. Diamond.

- 2311 Up- and Down-Regulation of Granulocyte/Macrophage-Colony Stimulating Factor Activity in Murine Skin Increase Susceptibility to Skin Carcinogenesis by Independent Mechanisms. Amir Mann, Kai Breuhahn, Peter Schirmacher, And Wilhelm, Carsten Beyer, Andrea Rosenau, Sutz Orzbek, Stefan Rose-John, and Manfred Blessing.

- 2328 Elevation of Breast Carcinoma Nm23-H1 Metastasis Suppressor Gene Expression and Reduced Motility by DNA Methylation Inhibition. Melanie T. Hartough, Susan E. Clare, Michael Mar, Abdel G. Elkahloun, Dennis Sgms, C. Kent Osborne, Gary Clark, and Patricia S. Steeg.

- 2328 Malignant Breast Epithelial Cells Stimulate Aromatase Expression via Promoter II in Human Adipose Fibroblasts: An Epithelial-Stromal Interaction in Breast Tumors Mediated by CCAAT/Enhancer Binding Protein  $\beta$ . Jianfeng Zhou, Bilgin Gurates, Sijun Yang, Siby Sebastian, and Sendar E. Bulun.

## Letter to the Editor

- 2335 Correspondence re: O. J. Arola et al., Acute Doxorubicin Cardiotoxicity Involves Cardiac Apoptosis. Cancer Res., 60: 1789-1792, 2000. Holger W. Auner, Christoph Tinschen, Werner Linkesch, Gabriele Halwachs-Baumann, and Heinz Sill.

## Announcements

- 2001 Annual Meeting  
Future Annual Meetings of the American Association for Cancer Research  
Late-breaking Research Session at the Annual Meeting  
Workshop on Pathobiology of Cancer  
Workshop on Molecular Biology in Clinical Oncology  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## Erratum

- H. Spigren et al., Cancer Res., 60: 6832-6835, 2000.

## Author Index

## March 15, Number 6

- 2365 Stimulation of Mammalian Tumorigenesis by Systemic Tissue Inhibitor of Metalloproteinase-4 Gene Delivery. Yangfeng Jiang, Mingcheng Wang, Mahmut Y. Celikler, Yiliang E. Liu, Qing Xiang, Amy Sang, Ishak D. Goldberg, and Y. Eric Shi.

- 2371 Patterns of CDKN2A Gene Loss in Sequential Oral Epithelial Dysplasias and Carcinomas. S. Ali Shahnavaz, Grace Bradley, Joseph A. Regezi, Nalin Thakker, Lushan Gao, David Hogg, and Richard C. K. Jordan.

- 2376 A Novel Alternative Approach for Prediction of Radiation Response of Squamous Cell Carcinoma of Head and Neck. Dhab Hamra, Dennis C. Shreve, Vaneerat Ratanathurathorn, Xueqing Xia, Randy Breau, James Suen, and Shulin Li.

- 2381 A Case-Control Study of Microsomal Epoxide Hydrolase, Smoking, Meat Consumption, Glutathione S-Transferase M3, and Risk of Colorectal Adenomas. Victoria Cortes, Kimberly Siegmund, Quixiong Chen, Niaman Zhou, Ash Diep, Harold Frankel, Eric Lee, Qin-shi Zhu, Robert Hale, and Daniel Levy.

- 2386 Protection of Mice against Leukemia after Vaccination with Bone Marrow-derived Dendritic Cells Loaded with Apoptotic Leukemia Cells. Sophie Pascreau, Simone Branger, Jean-Loup Salzmann, David Klitzmann, and Bruno M. Colombo.

- 2390 Activated in Prostate Cancer: A PDZ Domain-containing Protein Highly Expressed in Human Primary Prostate Tumors. Hassan Chaik, Mark A. Rubin, Neil R. Mucci, Lang Li, Jeremy M. G. Taylor, Mark L. Day, John S. Rhim, and Jill A. Macoska.

- 2395 Intestinal Microflora Are Necessary for Development of Spontaneous Adenocarcinoma of the Large Intestine in T-Cell Receptor  $\beta$  Chain and p53 Double-Knockout Mice. Shouichi Kado, Kazumi Uchida, Hideyuki Funahashi, Shin Iwata, Yuriko Nagata, Minoru Ando, Masaharu Onoue, Yoshiaki Matsuo, Makoto Ohwaki, and Masami Morimoto.

- 2399 **Promoter Methylation Regulates *Helicobacter pylori*-stimulated Cyclooxygenase-2 Expression in Gastric Epithelial Cells.** Mahmood Akhtar, Yulan Cheng, Romina M. Magno, Hassan Ashkhar, Duane T. Smoot, Stephen J. Melzer, and Keith T. Wilson.
- 2404 **Vascular Endothelial Growth Factor (VEGF)-C Differentially Affects Tumor Vascular Function and Leukocyte Recruitment: Role of VEGF-Receptor 2 and Host VEGF-A.** Ananth Kadam, Carla Mosta Carrara, Chae-yeok Yun, Timothy P. Padra, Dennis E. J. G. J. Dolmans, Peter Carmeliet, Dai Fukumura, and Rakesh K. Jain.
- 2409 ***BMI-1* Gene Amplification and Overexpression in Hematological Malignancies Occur Mainly in Mucosa Cell Lymphomas.** Silvia Bel, Frederic Toni, Magda Pinyol, Xavier Paig, Luis Hernández, Silvia Hernández, Pedro L. Fernández, Maarten van Lubzen, Dolores Colomer, and Elias Campo.
- 2413 **Inhibition of Vascular Endothelial Growth Factor Receptor Signaling Leads to Reversal of Tumor Resistance to Radiotherapy.** Ling Gong, Edwin Donnelly, Gerald McMahon, P. Charles Lin, Elaine Sierra Rivera, Halima Oshinka, and Dennis E. Hallahan.
- 2420 **Overexpression of HER-2 in Ovarian Carcinomas.** Ingeger Hellström, Gary Goodman, Janice Pullman, Yi Yang, and Karl Erik Hellström.
- 2424 **Ligands for Peroxisome Proliferator-activated Receptors  $\alpha$  and  $\gamma$  Inhibit Chemically Induced Colitis and Formation of Aberrant Crypt Foci in Rats.** Takaji Tanaka, Hiroyuki Kohno, Shin-ichiro Yoshitani, Shigeki Takashima, Ataru Okumura, Akira Murakami, and Masashi Hosokawa.
- 2429 **Hypoxia Activates a Platelet-derived Growth Factor Receptor/Phosphatidylinositol 3-Kinase/Akt Pathway That Results in Glycogen Synthase Kinase-3 Inactivation.** Eunice Y. Chen, Nathalie M. Mazure, Jonathan A. Cooper, and Amato J. Giaccia.
- 2434 **RGD-Tachyplesin Inhibits Tumor Growth.** Yixin Chen, Xueming Xu, Shugan Hong, Jinguo Chen, Ningfei Liu, Charles B. Underhill, Karen Crewsell, and Lurong Zhang.
- Regular Articles**
- Biochemistry and Biophysics**
- 2439 **Tyrosine Kinase-dependent, Phosphatidylinositol 3'-Kinase, and Mitogen-activated Protein Kinase-independent Signaling Pathways Prevent Lung Adenocarcinoma Cells from Anoikis.** Lin Wei, Yu Yang, and Qiang Yu.
- 2445 ***cis*-Polyunsaturated Fatty Acids Stimulate  $\beta_1$  Integrin-mediated Adhesion of Human Breast Carcinoma Cells to Type IV Collagen by Activating Protein Kinases C $\alpha$  and  $\alpha_2$ .** Rami Faltusci, Margaret D. George, Steven K. Akiyama, Frances M. Wotter, Kenneth Olden, and John D. Roberts.
- 2453 **Maturation of Erythroid Cells and Erythrocytoid Development Are Affected by the Kinase Activity of Lyn.** Peta A. Tillbrook, Gene A. Palmer, Thomas Bittorf, David J. McCarthy, Michael J. Wright, Mohinder K. Sarma, Diana Linnekin, Vanessa S. Crall, James H. Williams, Evan Ingley, Jens Schneider-Mergener, Gerald Krüttgen, and P. Peter Klinken.
- 2459 **Induction of the Mitochondrial Permeability Transition Mediates the Killing of HeLa Cells by Staurosporine.** Marco Tufani, Dmitri A. Minchenko, Ada Serroni, and John L. Farber.
- 2467 **Mechanism of Specific Nuclear Transport of Adriamycin: The Mode of Nuclear Translocation of Adriamycin-Proteasome Complex.** Ken-ichi Kiyomiyu, Saburo Matsuo, and Masaru Kurebe.
- Carcinogenesis**
- 2472 **Modulation of Biomarkers by Chemopreventive Agents in Smoke-exposed Rats.** Alberto Izotti, Roumen M. Balansky, Francesco D'Agostini, Carlo Benicelli, Steven R. Myers, Clinton J. Grubbs, Ronald A. Lubet, Gary J. Kelloff, and Silvio De Flora.
- 2480 **Association between DNA Repair-deficiency and High Level of p53 Mutations in Melanoma of Xeroderma Pigmentosum.** Alan Spatz, Giuseppina Giglia-Mari, Simone Benhamou, and Alain Sarasin.
- 2487 **Dimethylbenzanthracene Carcinogenesis in *Gadd45*-null Mice Is Associated with Decreased DNA Repair and Increased Mutation Frequency.** M. Christine Hollander, Oleg Kovalsky, Jesus M. Salvador, Kate E. Kim, Andrew D. Patterson, Diana C. Haines, and Albert J. Fornace, Jr.
- Clinical Investigations**
- 2492 **Identification of Gene Expression Patterns in Superficial and Invasive Human Bladder Cancer.** Thomas Thykjaer, Christopher Workman, Mogens Knudsen, Karin Dencker, Hans Wolf, Lars Dyreborg Andersen, Casper Melbye Fredericksen, Steen Knudsen, and Torben F. Ørntoft.
- 2500 **A Risk-Stratification Model of Non-Small Cell Lung Cancers Using Cyclin E, Ki-67, and *ras* p21: Different Roles of G1 Cyclins in Cell Proliferation and Prognosis.** Hiroshi Doiwa-Akita, Fumihito Homma, Takayuki Mishina, Shigeaki Ogura, Michio Shimizu, Hiroyuki Kato, and Yoshiyuki Kawakami.
- 2505 **Influence of *TP53* Gene Alterations and *c-erbB-2* Expression on the Response to Treatment with Docetaxel in Locally Advanced Breast Cancer.** Stephanie Geisler, Per Eystein Lønning, Turid Aas, Hilde Johnsen, Øystein Fluge, Dagfinn Faksvåg Haugen, John Rønne Lilloeang, Lars Andersen Aaklen, and Anne-Lise Borresen-Dale.
- 2513 **Tumor Microcirculation Evaluated by Dynamic Magnetic Resonance Imaging Predicts Therapy Outcome for Primary Rectal Carcinoma.** Alexander F. DeVries, Jürgen Griebel, Christian Kremer, Werner Judmaier, Thomas Gneiting, Alfons Kreczy, Dietmar Olfert, Karl-Peter Pfeiffer, Guntar Brix, and Peter Lukes.
- 2517 **Molecular Quantification of Response to Therapy and Remission Status in *TEL-AML1*-Positive Childhood ALL by Real-Time Reverse Transcription-Polymerase Chain Reaction.** Katharina Seeger, Karl Anton Kreuzer, Ulrich Lass, Tillmann Taube, Dirk Buchwald, Cornelia Eckert, Gabriele Kömer, Christian-A. Schmidt, and Günter Henzel.
- 2523 **Detection of Blood-borne Cells in Colorectal Cancer Patients by Nested Reverse Transcription-Polymerase Chain Reaction for Carcinoembryonic Antigen Messenger RNA: Longitudinal Analyses and Demonstration of Its Potential Importance as an Adjunct to Multiple Serum Markers.** Fiorella Guadagni, Judith Kantor, Simona Aleo, Maria Daniela Carone, Antonella Flauto, Roberta D'Alessandro, Maria Rosaria Abbollino, Maurizio Cosmelli, Franco Graziano, Fabio Carboni, Sandro Galati, Pasquale Perti, Francesco Sica, Sciacetta, John W. Greiner, Syed V. S. Kashmiri, Seth M. Steinberg, Mario Ronelli, and Jeffrey Schaner.
- 2533 **Vascular Endothelial Growth Factor and Basic Fibroblast Growth Factor Urine Levels as Predictors of Outcome in Hormone-refractory Prostate Cancer Patients: A Cancer and Leukemia Group B Study.** Robert A. Birk, Susan Halabi, David T. Felt, Carlos R. Rodriguez, Daniel F. Hayes, Nicholas J. Vogelzang, Philip Kantoff, Marc A. Shuman, and Eric J. Small.
- Endocrinology**
- 2537 **Decreased Expression of Estrogen Receptor  $\beta$  Protein in Proliferative Pre-invasive Mammary Tumors.** Pascal Roger, Majida Esslimani Sahla, Sari Mikela, Jan Åke Gustafsson, Pierre Ballek, and Henri Rochefort.
- Epidemiology and Prevention**
- 2542 **Transplacental Chemical Exposure and Risk of Infant Leukemia with *MLL* Gene Fusion.** Freda E. Alexander, Sherry L. Patheal, Andrea Biondi, Silvia Brandalise, Maria-Elena Cabrera, Li C. Chan, Zhu Chen, Giuseppe Cimino, Jose-Carlos Condado, Long-Jun Gu, Hany Hussein, Eiichi Ishii, Azza M. Kamel, Silvia Labra, Isis Q. Magalhães, Shuki Mizutani, Eleni Petridou, Maria Pombo de Oliveira, Patrick Yuen, Joseph L. Wiemels, and Mel F. Greaves.
- 2547 **Reciprocal Expression of ER $\alpha$  and ER $\beta$  Is Associated with Estrogen-mediated Modulation of Intestinal Tumorigenesis.** Michael J. Weyant, Adelaide M. Carothers, Najia N. Mahmood, H. Leon Bradford, Helen Remotti, Robyn T. Bilinski, and Monica M. Berengueri.
- Experimental Therapeutics**
- 2552 **Peptide Transport by the Multidrug Resistance Protein MRP1.** Mariska C. de Jong, Jerry W. Sluiter, David L. Scheller, Anouk B. Schreijers, Wouter C. Paik, Remco Dieckelberg, Marcel Kool, Henk J. Brostman, Rob H. Meloen, and Erik J. Schepers.
- 2558 **Cell Surface-directed Interaction of Anthracyclines Leads to Cytotoxicity and Nuclear Factor  $\kappa$ B Activation but not Apoptosis Signaling.** Nicolas Maestre, Thomas R. Tritton, Guy Laurent, and Jean-Pierre Jaffrès.
- 2562 **Adenovirus-mediated Transfer of Inducible Caspases: A Novel "Death Switch" Gene Therapeutic Approach to Prostate Cancer.** Shahrish F. Shariat, Smriti Desai, Weiqiao Song, Tabira Khan, Julie Zhao, Cuong Nguyen, Barbara A. Foster, Norman Greenberg, David M. Spencer, and Kevin M. Slawin.
- 2572 **Therapeutic Efficacy of a Soluble Receptor Activator of Nuclear Factor  $\kappa$ B-IgG Fusion Protein in Suppressing Bone Resorption and Hypercalcemia in a Model of Humoral Hypercalcemia of Malignancy.** Bahutunde O. Oyajobi, Dick M. Anderson, Kathy Traanandee, Paul J. Williams, Toshiyuki Yoneda, and Gregory R. Mundy.
- 2579 **Selective Sensitization of Retinoblastoma Protein-deficient Sarcoma Cells to Doxorubicin by Flavopiridol-mediated Inhibition of Cyclin-dependent Kinase 2 Kinase Activity.** Weiwei Li, Jiaqiao Fan, and Joseph R. Bertino.
- 2583 **The Cyclin-dependent Kinase Inhibitor (CDKI) Flavopiridol Disrupts Phorbol 12-Myristate 13-Acetate-induced Differentiation and CDKI Expression while Enhancing Apoptosis in Human Myeloid Leukemia Cells.** Leanne Cartee, Zhilang Wang, Roy H. Decker, Sukumar P. Chellappan, Gina Fusaro, Karen G. Hirsch, Heidi M. Sankala, Paul Dent, and Steven Grant.
- 2592 **Liposome-encapsulated Doxorubicin Targeted to CD44: A Strategy to Kill CD44-overexpressing Tumor Cells.** Rom E. Eliaz and Francis C. Szoka, Jr.
- 2602 **Bisphosphonate Treatment Inhibits the Growth of Prostate Cancer Cells.** Margaret V. Lee, Eva M. Fong, Frederick R. Singer, and R. Sean Goonetilleke.
- 2609 **Growth Suppression of the Hepatocellular Carcinoma Cell Line Hepa1-6 by an Activatable Interferon Regulatory Factor-1 in Mice.** Andrea Krüger, Dörte Ottmann, Tim U. Krehbe, Leonhardt Mohr, Hubert E. Blum, Hansjörg Hauser, and Michael Geissler.
- Immunology**
- 2618 **Enhancement of Tumor Lysate- and Peptide-pulsed Dendritic Cell-based Vaccines by the Addition of Foreign Helper Protein.** Koichi Shimizu, Elaine K. Thomas, Martin Giedlin, and James J. Mulé.
- 2625 **Immunization with an Antigen Identified by Cytokine Tumor Vaccine-resistant SEREX Assay Suppressed Growth of the Rat  $\beta_1$  Glioma in Vivo.** Hideo Okada, Jason Attanucci, Katinka M. Giezenman-Smits, Cynthia Brissette-Storkus, Wendy K. Faltusci, Salvatore Gambotto, Ian F. Pollack, Kay Pogue-Geile, Michael T. Lotze, Michael E. Borzik, and William H. Chambers.
- Molecular Biology and Genetics**
- 2632 **Single Nucleotide Instability without Microsatellite Instability in Rat Mammary Carcinomas.** Naoko Watanabe, Eriko Okochi, Yoshikazu Hirayama, Yoshiya Shimada, Kazuyoshi Yanagihara, Michihiro C. Yoshida, Satoru Takahashi, Masataka Michizuki, Takashi Sugimura, Minako Nagao, and Yoshikazu Ushijima.
- 2641 **The Kaposi's Sarcoma-associated Herpesvirus G Protein-coupled Receptor Promotes Endothelial Cell Survival through the Activation of Akt/Protein Kinase B.** Silvia Montaner, Akini Sodhi, Salvatore Pece, Enrique A. Mesri, and J. Silvio Gutkind.
- 2649 **Severe Combined Immunodeficient Cells Expressing Mutant hRAD5A Exhibit a Marked DNA Double-Strand Break Repair and Error-prone Chromosome Repair Defect.** Janice M. Pluth, Laura M. Fried, and Cordula U. Kirchgesner.
- 2656 **Antiproliferative and Antiapoptotic Effects of c-Rel May Occur within the Same Cells via the Up-regulation of Manganese Superoxide Dismutase.** David Bernard, Brigitte Quatannens, Agnès Begue, Bernard Vandenbunder, and Corinne Abbadie.
- 2665 **U11c(44q23q24) Generates an *MLL*-Human *Gephyrin* Fusion Gene along with a *de facto* Truncated *MLL* in Acute Monoblastic Leukemia.** Naruo Kuwada, Fumihiko Kimura, Takuya Matsumura, Takuya Yamashita, Yukihiro Nakamura, Naoki Wakimoto, Takashi Ikeda, Ken Sato, and Kazuo Motoyoshi.
- 2670 **K-Ras-mediated Increase in Cyclooxygenase 2 mRNA Stability Involves Activation of the Protein Kinase B.** Hongmiao Sheng, Jinyi Shao, and Raymond N. Dubois.
- 2676 **Genetic Pathways in the Evolution of Morphologically Distinct Colorectal Neoplasms.** Masakazu Yoshino, John M. Carethers, Lavinia Lugh, Koji Saito, Premysl Slezak, Edgar Jaramillo, Carlos Rubio, Kinichi Kozumi, Kohei Hirakawa, and C. Richard Boland.
- 2684 **Gastric Cancer and Human Leukocyte Antigen: Distinct *DQ* and *DR* Alleles Are Associated with Development of Gastric Cancer and Infection by *Helicobacter pylori*.** Patrick K. E. Magnusson, Helena Ernsth, Inger Eriksson, Maria Hekk, Olof Nyren, Lars Engstrand, Lars-Erik Hansson, and Ulf B. Gyllenstein.
- 2690 **The Ewing's Sarcoma Gene Product Functions as a Transcriptional Activator.** Karl L. Rossow and Ralf Janknecht.
- 2696 **Placenta Growth Factor Gene Expression Is Induced by Hypoxia in Fibroblasts: A Central Role for Metal Transcription Factor-1.** Christopher J. Green, Peter Lichter, Shuang T. Huynh, Mariana Yanovsky, Keith R. Ladenson, Walter Schaffner, and Brian J. Murphy.
- Tumor Biology**
- 2704 **Ewing's Sarcoma Family Tumors Are Sensitive to Tumor Necrosis Factor-related Apoptosis-inducing Ligand and Express Death Receptor 4 and Death Receptor 5.** Nicholas Mitsakakis, Vassiliki Prodaki, Constantine Mitsakakis, and Maria Tsokos.
- 2713 **Tumor Necrosis Factor  $\alpha$  Induces BID Cleavage and Bypasses Antiapoptotic Signals in Prostate Cancer LNCaP Cells.** George Kulik, Jonathan P. Carson, Tomas Vornastek, Kevin Overman, Barry D. Gooch, Sriniwas Srinivasulu, Emad Alhemri, Gabriel Nunez, and Michael J. Weber.
- 2720 **Differential Expression of Cyclooxygenase-2 and Its Regulation by Tumor Necrosis Factor- $\alpha$  in Normal and Malignant Prostate Cells.** Venkatesh Subramanyam, Anita L. Sabichi, Norma Llanas, Scott M. Lippman, and David G. Menter.
- 2728 **Overexpression of Dihydrodiol Dehydrogenase as a Prognostic Marker of Non-Small Cell Lung Cancer.** Nan-Yang Hsu, Heng-Chen Ho, Kuan-Chih Chow, Tze-Yi Lin, Chih-Shun Shih, Liang-Shun Wang, and Chun-Ming Tsai.
- 2732 **Role of Carcinoembryonic Antigen in the Progression of Colon Cancer Cells That Express Carbohydrate Antigen.** Shigeki Minami, Junichiro Furu, and Takashi Kanetsuna.
- 2736 **Angiogenesis and Prostate Cancer: Identification of a Molecular Progression Switch.** Wendy J. Hsua, Colleen F. Harahan, Roberto J. Barrios, Jonathan W. Simons, and Norman M. Greenberg.
- 2744 **Sublethal Irradiation Promotes Migration and Invasiveness of Glioma Cells: Implications for Radiotherapy of Human Glioblastoma.** Christine Wild-Bode, Michael Weller, Andreas Rimmer, Johannes Dethgens, and Wolfgang Wick.
- 2751 **Restoration of Epithelial Cell Polarity in a Colorectal Cancer Cell Line by Suppression of  $\beta$ -catenin/T-Cell Factor 4-mediated Gene Transactivation.** Yasuyoshi Nishitani, Tetsu Yamada, Asako S. Takasaka, Reiko Hayashi, Fumio Hasegawa, Kohzoh Imai, and Setsuo Hirohashi.
- 2759 **Soluble Decoy Receptor 3 Is Expressed by Malignant Gliomas and Suppresses CD95 Ligand-induced Apoptosis and Chemotaxis.** Wilfried Roth, Stefan Jermann, Matsutoshi Nakamura, Michael Platten, Wolfgang Wick, Paul Kleihues, Matthias Bähr, Hiroko Ohgaki, Avi Ashkenazi, and Michael Weller.
- 2766 **Catalase-overexpressing Thymocytes Are Resistant to Glucocorticoid-induced Apoptosis and Exhibit Increased Net Tumor Growth.** Margaret E. Tome, Amanda F. Baker, Garth Powrie, Claire M. Payne, and Margaret M. Brecht.
- 2774 **Reduced Levels of Retinyl Esters and Vitamin A in Human Renal Cancers.** Xiaojiao Gao, David M. Natus, Alberto Ruiz, Robert R. Rando, Dean Bok, and Lorraine J. Gudas.
- 2782 **Loss of Cyclin D2 Expression in the Majority of Breast Cancers Is Associated with Promoter Hypermethylation.** Ella Evron, Christopher B. Umbricht, Doran Koz, Venu Ramani, David M. Loeb, Birnith Niranjani, Lakjaya Bulwala, Sigmund A. Weitzman, Jeffrey Marks, and Sarawati Sukumar.
- Meeting Report**
- 2788 **The Twentieth International Symposium of the Sapporo Cancer Seminar Foundation: Gene Environment Interaction and Cancer Prevention.** Eriko Mihachi, Helmut Bartsch, and Hiroshi Kobayashi.
- 2793 Announcements**
- 2001 Annual Meeting  
Future Annual Meetings of the American Association for Cancer Research  
Late-breaking Research Session at the Annual Meeting  
Workshop on Pathobiology of Cancer  
Workshop on Molecular Biology in Clinical Oncology  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events
- 2796 **Author Index**



## Advances in Brief

- 2799 **The Association of Human Papillomavirus 16/18 Infection with Lung Cancer among Nonsmoking Taiwanese Women.** Ya-Wen Cheng, Hai-Ling Chiu, Gwo-Tsang Shue, Lin-Ling Hsieh, Jung-Ta Chen, Chih-Yi Chen, Jun-Ming Su, and Hui-Lee.
- 2804 **Highly Specific Tumor Binding of a  $^{213}\text{Bi}$ -labeled Monoclonal Antibody against Mutant E-Cadherin Suggests Its Usefulness for Locoregional  $\alpha$ -Radioimmunotherapy of Diffuse-Type Gastric Cancer.** Reingard Senekowitsch-Schmidtke, Christoph Schumacher, Karl-Friedrich Becker, Tuo-Mo K. Nikula, Christof Seidl, Ingrid Becker, Mathias Miedler, Christos Apostolides, Christoph Adam, Roswitha Huber, Elisabeth Krenmer, Kathrin Fischer, and Markus Schwaiger.
- 2809 **A Light, Nontoxic Interleukin 12 Protocol Inhibits HER-2/neu Mammary Carcinogenesis in BALB/c Transgenic Mice with Established Hyperplasia.** Elena Cifaldi, Elena Quaglino, Emma Di Carlo, Piero Maviani, Michela Spadaro, Pier Luigi Lollini, Stanley Wolf, Katia Boggio, Guido Forni, and Federica Cavallo.
- 2813 **Lack of MSIH and MSH6 Characterizes Endometrial but not Colon Carcinomas in Hereditary Nonpolyposis Colorectal Cancer.** Pascal Schacher, Ana-Lisa Moros, Shannon A. Kuismanen, Kasper Truniger, Recta Viernikki, Reijo Salovaara, Johanna Ahti, Ralf Butzow, Josef Jirnczy, Päivi Peltomäki, and Minna Nyström-Lahti.
- 2816 ***p14<sup>ARF</sup>* Silencing by Promoter Hypermethylation Mediates Abnormal Intracellular Localization of MDM2.** Manuel Esteller, Carlos Coudon-Carol, Paul G. Conr, Steve J. Meltzer, Kamil S. Fodor, D. Neil Watkins, Gabriel Capella, Miguel Angel Pineda, Xavier Matias-Guiu, Jaime Prat, Stephen B. Baylin, and James G. Herman.
- 2822 **Mutations in the Carcinoembryonic Antigen Gene in Colorectal Cancer Patients: Implications on Liver Metastasis.** Zigmund and Peter Thomas.
- 2827 **Identification of Breast Cancer Resistant Protein/Mitoxantrone Resistance/Placenta-Specific, ATP-binding Cassette Transporter as a Transporter of NB-56 and J-107088, Topoisomerase I Inhibitors with an Indolecarbazole Structure.** Hideaki Komatsu, Hideaki Kotani, Yoshihiko Hara, Rinko Nakagawa, Mami Matsumoto, Hirohiko Arakawa, and Susumu Nishimura.
- 2833 **Mitogen-activated Protein Kinase Kinase 4 Metastasis Suppressor Gene Expression Is Inversely Related to Histological Pattern in Advancing Human Prostatic Cancers.** Hyung L. Kim, Donald J. Vander Griend, Ximing Yang, David A. Benson, Zita Dubauskas, Barbara A. Yoshida, Marina A. Cherkasova, Yajun Ichikawa, Mitchell H. Sokoloff, Ping Zhan, Theodore Karrison, Aiming Lin, Walter M. Stadler, Tomo Ichikawa, Mark A. Rubin, and Carrie W. Rinker-Schaeffer.
- 2838 **Ultraviolet Irradiation Induces BRCA2 Protein Depletion through a p53-independent and Protein Synthesis-dependent Pathway.** Shao-Chun Wang, Kishu Makino, Li-Kuo Su, Annie Y. Pao, Jeong-Soo Kim, and Mien-Chie Hung.
- 2843 **Extracellular Tumor-associated Prodrugs for the Selective Chemotherapy of Cancer: Application to Doxorubicin and Preliminary *In Vitro* and *In Vivo* Studies.** André Tronet, Alexandre Passioudou, Kim Van derpoort, Anne-Marie Fernandez, Roger Abarca-Quinones, Roger Baurain, Thomas J. Loh, Cecilia Ojiali, Dan Shochat, and Vincent Dubois.
- 2847 **CpG Island Methylation in Premalignant Stages of Gastric Cancer.** Gyeong-Joon Kang, Yong-Hee Shin, Hyeon-Yong Jung, Woo-Ho Kim, Jae Y. Ro, and Min-Gun Rhyu.
- 2852 **Reduced 1 $\alpha$ -hydroxylase Activity in Human Prostate Cancer Cells Correlates with Decreased Susceptibility to 25-Hydroxyvitamin D $_3$ -induced Growth Inhibition.** Ju-Yu Hsu, David Feldman, John E. McNeal, and Donna M. Peehl.
- 2857 **Progression and Enhancement of Metastatic Potential after Exposure of Tumor Cells to Chemotherapeutic Agents.** Joseph E. De Larco, Beverly R. K. Wuerz, J. Carlos Manuel, and Leo T. Furcht.
- 2862 **A Unique Pathway in the Housing of Human Multiple Myeloma Cells: CD44v10 Mediates Binding to Bone Marrow Endothelium.** Kewal Awwasthi, Ursula Günther, Hendrik De Rube, Ivan Van Riet, Ben Van Camp, and Karin Vanderkerken.
- 2866 **Norepinephrine-induced Migration of SW 620 Human Colorectal Cells Is Inhibited by  $\beta$ -Blockers.** Kai Masur, Bernd Niggemann, Kurt S. Zanker, and Frank Entschladen.
- 2870 **Cloning and Characterization of *CLIP6*, *CLIP7*, and *CLIP8*, Novel Candidate Genes for Leukemogenesis at Chromosome 12q14, a Region Commonly Deleted in B-Cell Chronic Lymphocytic Leukemia.** Hideaki Mahachi, Hidenori Fujii, George Calin, Hansjörg Alder, Massimo Negri, Laura Rascetti, Thomas J. Kipps, Florentia Bullicchi, and Carlo M. Croce.

## Regular Articles

## Biochemistry and Biophysics

- 2878 **Caspase-3 Activation by Lysosomal Enzymes in Cytochrome c-dependent Apoptosis in Myelodysplastic Syndrome-derived Cell Line P39.** Terutoshi Hishita, Saeo Tada-Oikawa, Kaoru Tohyama, Yasuo Mura, Toshio Nishizawa, Yumi Toyama, Yutaro Yoshida, Takashi Uchiyama, and Shosuke Kawasumi.
- 2885 **A Cyclin D1/Cyclin-dependent Kinase 4 Binding Site within the C Domain of the Retinoblastoma Protein.** Weijun Pan, Sara Cox, Ronald H. Hoess, and Robert H. Grifflin.

## Carcinogenesis

- 2892 **Androgen Receptor Stabilization in Recurrent Prostate Cancer Is Associated with Hypersensitivity to Low Androgen.** Christopher W. Gregory, Raymond T. Johnson, Jr., James L. Milder, Frank S. French, and Elizabeth M. Wilson.
- 2899 **Increased  $\beta$ -Catenin Expression and Nuclear Translocation Accompany Cellular Hyperproliferation *In Vivo*.** Joseph H. Seftin, Shahad Umar, Jangmo Xiao, and Andrew P. Morris.

## Clinical Investigations

- 2907 **Tumor Vascularity: A Histological Measure of Angiogenesis and Hypoxia.** Catherine M. L. West, Rachel A. Cooper, Julie A. Lancaster, Deepo P. Wilks, and Mike Brounley.

- 2911 **Expression of Hypoxia-inducible Factor-1 $\alpha$ : A Novel Predictive and Prognostic Parameter in the Radiotherapy of Oropharyngeal Cancer.** Daniel M. Aebbersold, Philipp Baur, Karl T. Beer, Jean Laisne, Valentin Djimon, Richard H. Greiner, and Gregg L. Semenza.

## Endocrinology

- 2917 **Circumventing Tamoxifen Resistance in Breast Cancers Using Antiestrogens that Induce Unconformal Changes in the Estrogen Receptor.** Caroline E. Connor, John D. Nenes, Gloria Broadwater, Timothy M. Wilson, Marco M. Gottardis, Mark W. Dewhirst, and Donald P. McDonnell.

## Epidemiology and Prevention

- 2923 **Characterization of the Biological Activity of  $\gamma$ -Glutamyl-S-methylcysteine: A Novel, Naturally Occurring Anticancer Agent from Garlic.** Yun Dong, Donald Lisk, Eric Black, and Clement Ip.

## Experimental Therapeutics

- 2929 **Inhibition of Platelet-derived Growth Factor Receptors Reduces Interstitial Hypertension and Increases Transcapillary Transport in Rats.** Kristian Petrá, Anne Ottmar, Marc Siquet, Elisabeth Buchdinger, Rolf K. Reed, Carl-Henrik Heldin, and Kristofer Rubin.
- 2935 **Comparative Biodistribution and Metabolism of Carbon-11-labeled N-[2-(Dimethylaminoethyl)acrylamide-4-carboxamide and DNA-intercalating Analogues.** Safye Osman, Gail Rowlinson-Bova, Sajinder K. Luthra, Eric O. Abouqay, Gavin D. Brown, Frank Brady, Ralph Myers, Swarna A. Ganage, William A. Denny, Bruce C. Bagley, and Pat M. Price.
- 2945 **Inhibition of Heat Shock Protein 90 Function by Anacardic Acid: The Morphological and Functional Differentiation of Breast Cancer Cells.** Pamela N. Münster, Mary Shephard, Mark M. Mosser, and Neal Rosen.
- 2953 **Fiber Knob Modifications Overcome Low, Heterogeneous Expression of the Coxackievirus Adenovirus Receptor That Limits Adenovirus Gene Transfer and Oncolysis for Human Rhabdomyosarcoma Cells.** Timothy P. Crisp, Edward J. Dunphy, Alison D. Holuh, Arvind Saini, Neeti H. Vast, Yoni Y. Mahler, Margaret H. Collins, Jane D. Snyder, Victor Krasnykh, David T. Curiel, Thomas J. Wickham, James DeGregori, Jeffrey M. Bergelson, and Mark A. Currier.

- 2961 **Unusual Potency of BN 80915, a Novel Fluorinated 5- $\alpha$ -Modified Camptothecin, toward Human Colon Carcinoma Cells.** Annette K. Larsen, Cristle Gilbert, Giethe Chyaz, Sergey V. Plisov, Inna Naguibeva, Olivier Lavergne, Laurence Lesueur-Ginot, and Dennis C. H. Bigg.

- 2968 **A Novel Metastatic Animal Model Reflects the Clinical Appearance of Human Neuroblastoma: Growth Arrest of Orthotopic Tumor by Natural, Cytotoxic Human Immunoglobulin M Antibodies.** Sylvia Engler, Christian Thiel, Kristine Förster, Kerstin David, Reinhard Brechtshof, and Hermann Juhl.

- 2974 **Doppler Ultrasound Imaging Detects Changes in Tumor Perfusion during Antivascular Therapy Associated with Vascular Anatomic Alterations.** Michael S. Gee, H. Mark Saunders, James C. Lee, James F. Santos, W. Timothy Jenkins, Sydney M. Evans, Giorgio Trinchieri, Chandra M. Sehgal, Michael D. Feldman, and William M. F. Lee.

- 2983 **Positron Emission Tomography-based Imaging of Transgene Expression Mediated by Replication-competent, Oncolytic Herpes Simplex Virus Type 1 Mutant Vectors *In Vivo*.** Andrea Jacobs, Jan G. Trujillo, Michael Dubovits, Timothy Akhurst, Jialin Balatoni, Bradley Beattie, Ravathi Joshi, Ronald Finn, Steven M. Larson, Ulrich Herrlinger, Peter A. Pechan, E. Antonio Chiozza, Xandra O. Breakefield, and Ronald G. Blasberg.

- 2996 **Radionuclide of Tumor-targeted Radiolabeling with Prolonged Topotecan Infusion in Human Breast Cancer Xenografts.** Bruce Ng, Elvira Kramer, Leonard Leibes, Caroline Wasserheit, Howard Hochster, Edward Blank, Roberto Ceriani, and Philip Furman.

- 3002 **Tamoxifen Inhibits Nerve Growth Factor-induced Proliferation of the Human Breast Cancerous Cell Line MCF-7.** Andrea Chiantena, Philip Lazarovici, Laurence Lemperier, Giuseppina Cantarella, Alfredo Bianchi, and Renato Bernardini.

- 3009 **Biological Purging of Breast Cancer Cells Using an Attenuated Replication-competent Herpes Simplex Virus in Human Hematopoietic Stem Cell Transplantation.** Aiguo Wu, Amitabh Meachum, Robert L. Martuza, Xia Liu, Myint Thein, Kenneth R. Mazumder, and Samuel D. Rabkin.

- 3016 **Gene Therapy Targeting for Hepatocellular Carcinoma: Selective and Enhanced Suicide Gene Expression Regulated by a Hypoxia-inducible Enhancer Linked to a Human  $\alpha$ -fetoprotein Promoter.** Akihiro Hirofumi, Akihiro Moriuchi, Kenji Nagata, Yukiko Onaga, Masaaki Onaga, Takeshi Hori, Shuichi Hinoe, Katsuhiko Hayashi, Takaki Tamaoki, and Hirohito Tsubouchi.

- 3022 **Herpes Simplex Virus-1 Thymidine Kinase Mutants Created by Semi-Random Sequence Mutagenesis Improve Prodrug-mediated Tumor Cell Killing.** Margaret E. Black, Mark S. Korkor, and Peter Saba.

- 3027 **Characterization of the Effect of Hyperthermia on Nanoparticle Extravasation from Tumor Vasculature.** Garth Kong, Rod D. Braun, and Mark W. Dewhirst.

- 3033 **1,2-Bis(methylsulfonyl)-1,4-dichloroethyl-2-(methylamino)-carbazodiazine (HDM): A Novel Sulfonamide Prodrug with Broad-Spectrum Anticancer Activity.** Rick A. Finch, Krishnamurthy Shyam, Philip G. Penketh, and Alan C. Sartorelli.

- 3039 **Magnetic Resonance Pharmacovascular Imaging to Detect and Predict Chemotherapy Delivery to Solid Tumors.** Dhanu Antem, Metayappan Solaiyappan, and Zaver M. Bhujwalla.

- 3045 **Use of a Modified Orotidine Decarboxylase Promoter to Achieve Efficient c-MYC or NM2YC-regulated Protein Expression.** Reba V. Iyengar, Cynthia A. Pawlik, Erik J. Knall, Doris A. Phelps, Rebecca A. Burger, Linda C. Harris, Philip M. Potter, and Mary K. Danks.

- 3053 **Ribozyme Cleavage of Topoisomerase mRNA Sensitizes Breast Epithelial Cells to Inhibitors of Topoisomerase.** Anne Ludvig, Gabriele Saezaki, Per S. Holm, Frank Triemann, Mario Lorenz, Thomas Emeich, Calvin B. Harley, and Thomas von Zglinicki.

- 3062 **Caspases as Key Executors of Methyl Selenite-induced Apoptosis (Anokis) of H146 Prostate Cancer Cells.** Cheng Jung, Zaisen Wang, Hui-Ling Gunther, and Jianxun Lu.

- 3071 **The Proteasome Inhibitor PS-341 Inhibits Growth, Induces Apoptosis, and Overcomes Drug Resistance in Human Multiple Myeloma Cells.** Teru Hideshima, Paul Richardson, Dharminder Chauhan, Vito J. Palombella, Peter J. Elliott, Julian Adams, and Kenneth C. Anderson.

## Immunology

- 3077 **Adoptive Transfer Enables Tumor Rejection Targeted against a Self-Antigen without the Induction of Autoimmunity.** Steven C. Eck and Laurence A. Turka.

- 3084 **Fac-induced Expression of Chemokines in Human Glioma Cells: Involvement of Extracellular Signal-regulated Kinase 1/2 and p38 Mitogen-activated Protein Kinase.** Chulhee Choi, Xiang Xu, Jae-Wook Oh, Sung Joong Lee, G. Yancy Gillespie, Heonyoung Park, Hanjoon Ju, and Ety N. Benveniste.

- 3092 **Inhibition of Caspases Maintains the Anticarcinogenic Function of  $\gamma\delta$  T Cells Repeatedly Challenged with Lymphoma Cells.** Marina Ferrarini, Giuseppe Consoglio, Patrizia Rovere, Clara Scriveri, Lorenzo Dagna, Davide Resta, Claudio Rigari, and Angelo A. Manfredi.

- 3096 **IL-4 Prevents the Blockade of Dendritic Cell Differentiation Induced by Tumor Cells.** Christine Mennetier-Carr, Marie Cecile Thomachot, Laurent Alberti, Gilles Mostoslavski, and Jean Yves Blay.

## Molecular Biology and Genetics

- 3105 **Hypermethylation of the CpG Island of Ras Association Domain Family 1A (RASAP1A), a Putative Tumor Suppressor Gene from the 3p21.3 Locus, Occurs in a Large Percentage of Human Breast Cancers.** Reinhard Dammann, Glen Yang, and Gerd P. Pfeifer.

- 3110 **The Retinoblastoma Gene Regulates Somatic Growth during Mouse Development.** Alexander Yu. Nikitin, Ben Shan, Andrea Flesken-Niklin, Kai-Hsuan Chang, and Wen-Hwa Lee.

- 3119 **Unusual Profile and High Prevalence of p53 Mutations in Esophageal Squamous Cell Carcinomas from Northern Iran.** Firouzeh Biranjani, Abdolmehdi Allameh, Parvin Mirbod, Hermann Josef Groene, Reet Koornag, and Monica Hollstein.

- 3124 **Transcriptional Gene Expression Profiles of Colorectal Adenoma, Adenocarcinoma, and Normal Tissue Examined by Oligonucleotide Arrays.** Daniel A. Notterman, Uri Alon, Alexander J. Sterk, and Arnold J. Levine.

- 3131 **Identification of a Novel Human Fibroblast Growth Factor and Characterization of Its Role in Oncogenesis.** Michael Jeffers, Richard Shinkels, Sudhanshu Prayaga, Ferenc Boldog, Meijia Yang, Catherine Burgess, Elna Fernandes, Beth Rittman, Juliette Shinkels, William J. LaRochelle, and Henri S. Lichenstein.

- 3139 **Genetic and Clinical Features of Human Pancreatic Ductal Adenocarcinomas with Widespread Microsatellite Instability.** Hiroyuki Yamamoto, Fumio Itoh, Hideaki Nakamura, Hiroshi Fukushima, Shigeru Saeki, Manuel Perucha, and Kibiro Inai.

- 3145 **The Alternative Reading Frame Tumor Suppressor Inhibits Growth through p21-dependent and p21-independent Pathways.** Modesto Modestou, Valerie Paig-Antich, Chandrasekhar Kergankar, Alex Eapen, and Dawn E. Quelle.

- 3151 **Bcl-2 Mediates Apoptosis by c-Myc in Transformed Primary Cells.** James B. DeHaddad, Daikun Sakamoto, Donald L. Evers, and George C. Prendergast.

## Tumor Biology

- 3157 **p53 and p21<sup>Waf-1</sup> Expression Correlates with Apoptosis or Cell Survival in Poorly Differentiated, but not Well-Differentiated, Reninoblastomas.** Aydin Divan, John Lawry, Ian R. Dunmore, M. Andrew Parsons, and Janice A. Royds.

- 3164 **Genomic Alterations in Malignant Transformation of Barrett's Esophagus.** Peter H. J. Riegman, Kees J. Visser, Janneke C. Alers, Eric Geelen, Wim C. J. Hop, Hugo W. Tilanus, and Herman van Dekken.

- 3171 **Characterization of Molecular Abnormalities in Human Fibroblastic Neoplasms: A Model for Genotype-Phenotype Association in Soft Tissue Tumors.** Axel Hoos, Jonathan I. Lewis, Cristina R. Antunescu, Maria E. Dudas, Larry Leon, James M. Woodruff, Murray F. Brennan, and Carlos Cordon-Cardo.

- 3176 **Expression Profiling Suggested a Regulatory Role of Liver-enriched Transcription Factors in Human Hepatocellular Carcinoma.** Liang Xu, Lijian Hui, Shaohui Wang, Jialin Gong, Ying Jin, Yanning Wang, Yuan Ji, Xin Wu, Zheqiang Han, and Genyao Hu.

- 3182 **Nitric Oxide Synthase II Gene Disruption: Implications for Tumor Growth and Vascular Endothelial Growth Factor Production.** Tamara E. Koropka, Jane E. Barker, Tiffany L. Bamford, Elizabeth Guida, Robin L. Anderson, and Alastair G. Stewart.

- 3188 **Overexpression of CDC25B Overrides Radiation-induced G $_2$ M Arrest and Results in Increased Apoptosis in Esophageal Cancer Cells.** Hiroshi Miyata, Yutichiro Doki, Hirofumi Yamamoto, Kentaro Kishi, Hiroshi Takemoto, Yoshiyuki Fujiwara, Takashi Yasuda, Masahiko Yano, Masatoshi Inoue, Hiroshi Shiozaki, I. Bernard Weinstein, and Morito Monden.

- 3194 **Lysophosphatidic Acid Promotes Matrix Metalloproteinase (MMP) Activation and MMP-dependent Invasion in Ovarian Cancer Cells.** David A. Fishman, Yueying Liu, Shawn M. Ellerbrock, and M. Sharon Slack.

- 3200 **Notch Signaling Induces Cell Cycle Arrest in Small Cell Lung Cancer Cells.** Viree Srinivasan, Michael W. Burgess, Rajan K. Ray, Dagmar R. Arnold, Barry D. Nelkin, Stephen B. Baylin, and Douglas W. Ball.

- 3206 **Vascular Endothelial Growth Factor-B and Vascular Endothelial Growth Factor-C Expression in Renal Cell Carcinomas: Regulation by the von Hippel-Lindau Gene and Hypoxia.** Sarah P. Gunningham, Margaret J. Currie, Cheng Han, Kevin Turner, Prudence A. E. Scott, Bridget A. Robinson, Adrian L. Harris, and Stephen B. Fox.

- 3212 **Alternative and Aberrant Messenger RNA Splicing of the *mdm2* Oncogene in Invasive Breast Cancer.** Jason Lukas, Da-Qing Gao, Mariana Keshmehian, Wen-Hsiung Wen, D. Tsao-Wei, Shoshana Rosenberg, and Michael F. Press.

## 3220 Announcements

Future Annual Meetings of the American Association for Cancer Research  
Workshop on Pathobiology of Cancer  
Workshop on Molecular Biology in Clinical Oncology  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## Perspectives in Cancer Research

- 3225 **A Gene Hypermethylation Profile of Human Cancer.** Manel Esteller, Paul A. Gore, Stephen B. Baylin, and James G. Herman.  
3230 **A Mutator Phenotype in Cancer.** Lawrence A. Loeb.

## Advances in Brief

- 3240 **Tumor Cells Regulate the Lytic Activity of Tumor-specific Cytotoxic T Lymphocytes by Modulating the Inhibitory Natural Killer Receptor Function.** Asma Gati, Nadia Guerra, Julien Girou-Michel, Bruno Azzarone, Eric Angevin, Alessandro Moretta, Salem Chouaib, and Anne Caignaud.  
3245 **Hepatomegaly in Transgenic Mice Expressing an Oncogenic Form of  $\beta$ -Catenin.** Axelle Cadoret, Christine Ovejero, Sihem Saadi-Kheddouci, Evelyne Souil, Monique Fabre, Béatrice Romagnolo, Axel Kahn, and Christine Perret.  
3250 **Molecular Regulation of Tumor Cell Vasculogenic Mimicry by Tyrosine Phosphorylation: Role of Epithelial Cell Kinase (Eck/EphA2).** Angel H. Hess, Elisabeth A. Seftor, Lynn M. G. Gardner, Kelly Carles-Kinch, Galen B. Schneider, Richard E. B. Seftor, Michael S. Kinch, and Mary J. C. Hendrix.  
3256 **Alternative Pathways to Prostate Carcinoma Activate Prostate Stem Cell Antigen Expression.** Purnima Dubey, Hong Wu, Robert E. Reiter, and Owen N. Witte.  
3262 **Cytosine-Phosphoguanine Methylation of Estrogen Receptors in Endometrial Cancer.** Masahito Sasaki, Leulula Kotcherghana, Abhijna Dharra, Seichiro Fujimoto, and Rajiv Dabhi.  
3267 **Promotion of Seminomatous Tumors by Targeted Overexpression of Glial Cell Line-derived Neurotrophic Factor in Mouse Testis.** Xianjun Meng, Dirk G. de Rooij, Kennet Westerlund, Mari Saarna, and Hannu Sariola.  
3272 **Methylenetetrahydrofolate Reductase Polymorphisms Increase Risk of Esophageal Squamous Cell Carcinoma in a Chinese Population.** Chunying Song, Deyin Xing, Wen Tan, Qingyi Wei, and Dongxin Lin.  
3276 **Overexpression of a Dominant-Negative Signal Transducer and Activator of Carcinoma 3 Variant in Tumor Cells Leads to Production of Soluble Factors That Induce Apoptosis and Cell Cycle Arrest.** Guilian Niu, Kenneth H. Shum, Mei Huang, Rajani Ravi, Atul Bork, William S. Dalton, Richard Jove, and Hua Yu.  
3281 **Effective Tumor Therapy with Plasmid-encoded Cytokines Combined with *in Vivo* Electroporation.** Frank Lohr, David Y. Lo, David A. Zaharoff, Kang Hu, Xunwu Zhang, Yongping Li, Yulin Zhao, Mark W. Dewhirst, Fan Yun, and Chuan-Yuan Li.  
3285 **Nitric Oxide-releasing Nucleoside Anti-inflammatory Drugs (NSAIDs) Alter the Kinetics of Human Colon Cancer Cell Lines More Effectively than Traditional NSAIDs: Implications for Colon Cancer Chemoprevention.** Jennie L. Williams, Simóna Borges, Ishar Hasan, Eddy Castillo, Frank Traganos, and Basil Rigas.  
3290 **Angiogenic Activity of Pyruvic Acid in *in Vivo* and *in Vitro* Angiogenesis Models.** Mi-Sook Lee, Eun-Jeung Moon, Se-Won Lee, Myoung-Sook Kim, Kyu-Won Kim, and Yang-Jin Kim.  
3295 **Neutral Endopeptidase Inhibits Neuropeptide-mediated Transactivation of the Insulin-like Growth Factor Receptor-Akt Cell Survival Pathway.** Makoto Sumitomo, Matthew I. Milosky, Ruxian Shen, Daniel Navarro, Jie Dai, Tomohiko Asano, Masamichi Hayakawa, and David M. Nann.  
3299 **The Cap'n' Collar Basic Leucine Zipper Transcription Factor NF-E2 p45-related Factor 2 Controls Both Constitutive and Inducible Expression of Intestinal Detoxification and Glutathione Biosynthetic Enzymes.** Michael McMahon, Ken Itoh, Masayuki Yamamoto, Simon A. Chatus, Colin J. Henderson, Lesley I. McLellan, C. Roland Wolf, Christophe Cavin, and John D. Hayes.  
3308 **Synthetic Peptides Inhibit Adhesion of Human Tumor Cells to Extracellular Matrix Proteins.** Ian B. DeRosier, Michael E. Penington, Thomas C. Siroka, Kit S. Lam, G. Tim Bowden, Elizabeth L. Barr, and Anne E. Cress.  
3314 **Prevention of Apoptosis by 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) in the MCF-10A Cell Line: Correlation with Increased Transforming Growth Factor  $\alpha$  Production.** John W. Davis II, Fredric T. Lauer, Andrew D. Burdick, Laurie G. Hudson, and Scott W. Burchiel.  
3321 **An Intronic Poly (AT) Polymorphism of the DNA Repair Gene XPC and Risk of Squamous Cell Carcinoma of the Head and Neck: A Case-Control Study.** Hongsheng Shen, Erich M. Sturges, Sikandar G. Khan, Yawei Qiao, Tala Shabbir, Susan A. Eicher, Yuechu Xu, Xinyi Wang, Sara S. Strom, Margaret R. Spitz, Kenneth H. Kraemer, and Qingyi Wei.  
3326 **Do Urinary Estrogen Metabolites Reflect the Differences in Breast Cancer Risk between Singapore Chinese and United States African-American and White Women?** Gerke Usan, Melissa Wilson, Brian E. Henderson, Laurence N. Kolonel, Kristine Monroe, Hui-Peng Lee, Adeline Seow, Mimi C. Yu, Frank Z. Stanczyk, and Elisabeth Gentschew.

## Regular Articles

## Carcinogenesis

- 3299 **The Cap'n' Collar Basic Leucine Zipper Transcription Factor NF-E2 p45-related Factor 2 Controls Both Constitutive and Inducible Expression of Intestinal Detoxification and Glutathione Biosynthetic Enzymes.** Michael McMahon, Ken Itoh, Masayuki Yamamoto, Simon A. Chatus, Colin J. Henderson, Lesley I. McLellan, C. Roland Wolf, Christophe Cavin, and John D. Hayes.  
3308 **Synthetic Peptides Inhibit Adhesion of Human Tumor Cells to Extracellular Matrix Proteins.** Ian B. DeRosier, Michael E. Penington, Thomas C. Siroka, Kit S. Lam, G. Tim Bowden, Elizabeth L. Barr, and Anne E. Cress.  
3314 **Prevention of Apoptosis by 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) in the MCF-10A Cell Line: Correlation with Increased Transforming Growth Factor  $\alpha$  Production.** John W. Davis II, Fredric T. Lauer, Andrew D. Burdick, Laurie G. Hudson, and Scott W. Burchiel.  
3321 **An Intronic Poly (AT) Polymorphism of the DNA Repair Gene XPC and Risk of Squamous Cell Carcinoma of the Head and Neck: A Case-Control Study.** Hongsheng Shen, Erich M. Sturges, Sikandar G. Khan, Yawei Qiao, Tala Shabbir, Susan A. Eicher, Yuechu Xu, Xinyi Wang, Sara S. Strom, Margaret R. Spitz, Kenneth H. Kraemer, and Qingyi Wei.  
3326 **Do Urinary Estrogen Metabolites Reflect the Differences in Breast Cancer Risk between Singapore Chinese and United States African-American and White Women?** Gerke Usan, Melissa Wilson, Brian E. Henderson, Laurence N. Kolonel, Kristine Monroe, Hui-Peng Lee, Adeline Seow, Mimi C. Yu, Frank Z. Stanczyk, and Elisabeth Gentschew.

## Epidemiology and Prevention

## 3222 Correction

M. L. Slattery *et al.*, Cancer Res. 61: 1000-1004, 2001.

## April 15, Number 8

## Experimental Therapeutics

- 3330 **Antitumor Activity and Bystander Effects of the Tumor Necrosis Factor-related Apoptosis-inducing Ligand (TRAIL) Gene.** Shunsuke Kagawa, Chao He, Jian Gu, Patricia Koch, Suk-Joo Rha, Jack A. Roth, Steven A. Curley, L. Clifton Stephens, and Bingliang Fang.  
3339 **Cloning and Characterization of Human Adenosine 5'-triphosphate-binding Cassette, Sub-family A, Transporter 2 (ABC2).** Bojana Vulevic, Zhenjun Chen, Jonathan T. Boyd, Warren Davis, Jr., Eileen S. Walsh, Martin G. Belinsky, and Kenneth D. Tew.  
3348 **Hypoxia in Radiation-induced Blood-Spinal Cord Barrier Breakdown.** Yu-Qing Li, James R. Ballinger, Robert A. Nordal, Zi-Fen Su, and C. Shun Wong.  
3355 **Preemptive Control of Graft-versus-Host Disease in a Murine Allogeneic Transplant Model Using Retrovirally Transduced Murine Suicidal Lymphocytes.** Steven M. Kornblau, Irma Shouf, Virginia Stelli, Donna Przeporka, L. Clifton Stephens, Richard Champlin, and Frank C. Martin III.  
3361 **24-Oxo Metabolites of Vitamin D<sub>3</sub> Analogues: Dissociation of Their Prominent Antitumor Effects from Their Lack of Calcium Modulation.** Masaki Shiohara, Milan Udovciovic, Junichi Hatake, Yasuko Hatake, Kenichi Koike, Atsushi Komiya, and H. Phillip Koefler.  
3369 **The Antiangiogenic Property of Docetaxel Is Synergistic with a Recombinant Humanized Monoclonal Antibody against Vascular Endothelial Growth Factor or 2-Methoxyestradiol but Antagonized by Endothelial Growth Factors.** Christopher J. Sweeney, Kathy D. Miller, Sean E. Sissons, Shunichi Nozaki, Douglas K. Hellman, Jianliu Shen, and George W. Sledge, Jr.  
3373 **p53/p21/CIP1 Cooperate in Enforcing Rapamycin-induced G<sub>1</sub> Arrest and Determine the Cellular Response to Rapamycin.** Shih Huang, Linda N. Liu, Hajime Hosoi, Michael B. Dilling, Takuma Shikata, and Peter J. Houghton.  
3382 **Attenuation of Doxorubicin Chronic Toxicity in Metallothionein-overexpressing Transgenic Mouse Heart.** Xuhua Sun, Xianxiang Zhou, and Y. James Kang.  
3388 **Human Dendritic Cells Transfected with Renal Tumor RNA Stimulate Polyclonal T-Cell Responses against Antigens Expressed by Primary and Metastatic Tumors.** Axel Heiser, Margaret A. Maurice, Donna R. Yanczy, Doris M. Coleman, Philipp Dahm, and Johannes Vieweg.  
3394 **E1A Sensitizes HER2/neu-overexpressing Fung's Sarcoma Cells to Topoisomerase II-targeting Anticancer Drugs.** Zhichao Zhou, Shu-Fang Jia, Men-Chie Hung, and Eugene S. Kleinerman.  
3399 **A Role of Interferon- $\gamma$  (IFN- $\gamma$ ) in Tumor Immunity: T Cells with the Capacity to Reject Tumor Cells Are Generated But Fail to Migrate to Tumor Sites in IFN- $\gamma$ -deficient Mice.** Chigusa Nakajima, Yasuhito Uekawa, Masayuki Iwasaki, Nobuya Yamaguchi, Takao Mukai, Ping Gao, Michio Tomura, Shiro Ono, Takahito Tsujimura, Hiromi Fujiwara, and Toshiyuki Hamada.

## Immunology

- 3399 **A Role of Interferon- $\gamma$  (IFN- $\gamma$ ) in Tumor Immunity: T Cells with the Capacity to Reject Tumor Cells Are Generated But Fail to Migrate to Tumor Sites in IFN- $\gamma$ -deficient Mice.** Chigusa Nakajima, Yasuhito Uekawa, Masayuki Iwasaki, Nobuya Yamaguchi, Takao Mukai, Ping Gao, Michio Tomura, Shiro Ono, Takahito Tsujimura, Hiromi Fujiwara, and Toshiyuki Hamada.

## Molecular Biology and Genetics

- 3406  **$\beta$ -Catenin Mutations in Biliary Tract Cancers: A Population-based Study in China.** Aili Rashid, Yu-Tang Gao, Supra Bhakti, Ming-Chang Shen, Bing-Sheng Wang, Jie Deng, Joseph F. Fraumeni, Jr., and Ann W. Hsing.  
3410 **Epigenetic Patterns in the Progression of Esophageal Adenocarcinoma.** Cindy A. Eads, Reginald V. Lord, Kumar Wickramasinghe, Tiffany I. Long, Soudamini K. Kurumbor, Leslie Bernstein, Jeffrey H. Peters, Steven R. DeMeester, Tom R. DeMeester, Kristin A. Skinner, and Peter W. Laird.  
3419 **p16<sup>INK4a</sup> and Histology-specific Methylation of CpG Islands by Exposure to Tobacco Smoke in Non-Small Cell Lung Cancer.** Duk-Hwan Kim, Heather H. Nelson, John K. Wiencke, Shichun Zheng, David C. Christiani, John C. Wain, Eugene J. Mark, and Karl T. Kelsey.  
3425 **Cloning of a New Member of the Human Kallikrein Gene Family, *KLK14*, Which Is Down-Regulated in Different Malignancies.** George M. Yousef, Angeliki Magklara, Albert Chang, Klaus Jung, Dionysios Katsaros, and Eleftherios P. Diamandis.  
3432 **Gestational Age and Gender-specific *In Utero* (V)DJ Recombinase-mediated Deletions.** Makoto Yoshida, J. Patrick O'Neill, Pamela M. Vacek, and Barry A. Finette.  
3439 **Partial Deletions of the Long and Short Arm of Chromosome 3 Point to Two Tumor Suppressor Genes in Uveal Melanoma.** Frank Tschentscher, Gabriele Prescher, Douglas E. Heerom, Valérie A. White, Harald Riedel, Gerassimos Anastassou, Harald Schilling, Norbert Bornfeld, Karl Ulrich Bartz-Schmidt, Bernhard Horschemke, Dietmar R. Lohmann, and Michael Zschmig.

## Tumor Biology

- 3443 **Beclin 1 Contains a Leucine-rich Nuclear Export Signal That Is Required for Its Autophagy and Tumor Suppressor Function.** Xiao Huan Liang, Jie Yu, Kristy Brown, and Beth Levine.  
3450 **Down-Regulation of Vascular Endothelial Growth Factor by Tissue Inhibitor of Metalloproteinase-2: Effect on *in Vivo* Mammary Tumor Growth and Angiogenesis.** Amin Hajjoui, Nor-Eddine Soumi, Laetitia Devy, Christine Grigues-Debris, Jean-Marie Lesalle, Hong Li, Christophe F. Devienne, He Liu, Alain Colige, Betty V. Nussgens, Francis Frankenne, Anne Maron, Patrice Yeh, Michel Perricaudet, Yawen Chang, Claudine Sorta, Claire-Michèle Calberg-Caboc, Jean-Michel Foidart, and Agnès Noël.  
3458 **Subcellular Localization and Distribution of the Breast Cancer Resistance Protein Transporter in Normal Human Tissues.** Marc Mallepaard, George L. Scheffer, Ian F. Funeyte, Margit A. van Gastelen, Adriane C. L. M. Pijnenborg, Alfred H. Schinkel, Marc J. van de Vijver, Rik J. Scheper, and Jan H. M. Schellens.  
3465 **Down-Regulation of  $\beta$ -Catenin-TCF Signaling Is Linked to Colonic Epithelial Cell Differentiation.** John M. Mariadason, Michael Bordonato, Fauzia Aslam, Li Shi, Mari Kuraguchi, Anna Velich, and Leonard H. Augenlicht.  
3472 **Mouse Intestinal Goblet Cells Expressing SV40 T Antigen Directed by the H19C2 Mucin Gene Promoter Undergo Apoptosis upon Migration to the Villi.** James R. Ginn, Jr., James W. Hicks, Anne Marie Gillespie, Jose L. Ries, Patrick A. Treseiler, Scott C. Kogan, Elaine J. Carlson, Charles J. Epstein, and Young S. Kim.  
3480 **Genetic Background Affects Susceptibility to Mammary Hyperplasias and Carcinomas in *Apc*<sup>Min/+</sup> Mice.** Amy Rapuch Moser, Laura F. Hegge, and Robert D. Cardiff.  
3486 **Increased Activator Protein 1 Activity as Well as Resistance to Heat-induced Radiosensitization, Hydrogen Peroxide, and Cigarette Are Inhibited by Indomethacin in Oxidative Stress-resistant Cells.** C. Matthew Bradbury, Jacob E. Locke, S. Jack Wei, Luis M. Rene, Shervin Kartipour, Clayton Hunt, Douglas R. Spitz, and David Gius.  
3493 **An Intracellular Form of Cathepsin B Contributes to Invasiveness in Cancer.** Anna M. Szpaderska and Allen Frankfurter.  
3501 **Viruses as Antitumor Weapons: Defining Conditions for Tumor Remission.** Dominik Wodarczyk.  
3508 **Down-Regulation of E-Cadherin Gene Expression by Collagen Type I and Type III in Pancreatic Cancer Cell Lines.** Andre Menke, Christian Philipp, Roger Vogelmann, Björn Seidel, Manfred P. Lutz, Guido Adler, and Doris Wedlich.

## Virology

- 3518 **Interleukin 12-activated Lymphocytes Influence Tumor Genetic Programs.** Federica Cavallo, Elena Quaglini, Loredana Cifalà, Emma Di Carlo, Alessandra Andrei, Paola Benabib, Peter Musiani, Guido Fornace, and Raffaele A. Calogero.

## Meeting Report

- 3524 **Third International Dresden Symposium on Immunotherapy of Cancer.** Marc Schmitz, Martin Bornhauser, Detlef Ockert, Ernst Peter Richter.

## 3529 Announcements

Future Annual Meetings of the American Association for Cancer Research  
Workshop on Pathobiology of Cancer  
Workshop on Molecular Biology in Clinical Oncology  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## 3531 Erratum

D. Li *et al.*, Cancer Res. 61: 1445-1450, 2001.

## 3532 Author Index

## May 1, Number 9

## Advances in Brief

- 3535 **Enhanced Chemoresponsibility to CPT-11 with Proteasome Inhibitor PS-341: Implications for Systemic Nuclear Factor- $\kappa$ B Inhibition.** James C. Cusack, Jr., Rong Liu, Michael Houston, Karin Abendroth, Peter J. Elliott, Julian Adams, and Albert S. Baldwin, Jr.
- 3541 **Mutations in Fibroblast Growth Factor Receptor 2 and Fibroblast Growth Factor Receptor 3 Genes Associated with Human Gastric and Colorectal Cancers.** Jun-Hyong Kang, Ki-Hyuk Shin, and Jae-Guh Park.
- 3544 **Alterations of Gene Expression during Colorectal Carcinogenesis Revealed by cDNA Microarrays after Laser-Capture Microdissection of Tumor Tissues and Normal Epithelia.** Osamu Kitahara, Yoshio Furukawa, Toshihiro Tanaka, Chikashi Kihara, Kenji Ono, Renspei Yanagawa, Marcelo E. Nita, Toshihisa Takagi, Yusuke Nakamura, and Tatsuhiko Tsumoda.
- 3550 **Amplification and Overexpression of Androgen Receptor Gene in Hormone-Refractory Prostate Cancer.** Marika J. Linja, Kimmo J. Savinainen, Olli R. Saramäki, Teuvo L. J. Tammela, Robert L. Vessella, and Tapio Visakorpi.
- 3556 **A Genetically Tractable Model of Human Glioma Formation.** Jeremy N. Rich, Chunhui Gao, Roger E. Menden, Darrell D. Bigner, Xiao-Fan Wang, and Christopher M. Counter.
- 3561 **Erythropoietin and Erythropoietin Receptor Expression in Human Cancer.** Gergely Acs, Peter Acs, Susan M. Beckwith, Richard L. Pitts, Emily Clements, Kundi Wong, and Ajay Verma.
- 3566 **CYP2C9 and UGT1A6 Genotypes Modulate the Protective Effect of Aspirin on Colon Adenoma Risk.** Jeannette Bigler, John Whittom, Johanna W. Lampe, Lisa Fosdick, Robert M. Bostick, and John D. Potter.
- 3570 **Mutations in the Nijmegen Breakage Syndrome Gene (NBS1) in Childhood Acute Lymphoblastic Leukemia (ALL).** Raymond Varon, André Reiss, Günter Henze, Hagen Graf v. Einsiedel, Karl Sperling, and Karlheinz Seeger.
- 3573 **Accelerated Age-related CpG Island Methylation in Ulcerative Colitis.** Jean-Pierre J. Issa, Nita Ahuja, Minoru Toyota, Mary P. Browner, and Teresa A. Brentnall.
- 3578 **Loss of Heterozygosity Events Impeding Breast Cancer Metastasis Contain the MTA1 Gene.** Michelle D. Martin, Kathy Fischbach, C. Kent Osborne, Syed K. Mohsin, D. Craig Allred, and Peter O'Connell.
- 3581 **5' CpG Island Methylation of the FHIT Gene Is Correlated with Loss of Gene Expression in Lung and Breast Cancer.** Sabine Zischner-Müller, Kevin M. Fong, Anirban Maitra, Stephen Lam, Joseph Gerads, Raheela Ashfaq, Arvind K. Virmani, Sarah Mitchell, Adi F. Gazdar, and John D. Minna.
- 3586 **Oncogenic TLS/ERG and EWS/FLI-1 Fusion Proteins Inhibit RNA Splicing Mediated by YB-1 Protein.** Howard A. Chanzy, Ming Hu, Dennis D. Hickstein, and Liu Yang.
- 3591 **The Histone Deacetylase Inhibitor, CBHA, Inhibits Growth of Human Neuroblastoma Xenografts in Vivo, Alone and Synergistically with All-Trans Retinoic Acid.** Dennis C. Coffey, Martha C. Kutko, Richard D. Glick, Lisa M. Butler, Glenn Heller, Richard A. Rifkind, Paul A. Marks, Victoria M. Richon, and Michael P. La Quaglia.

## Regular Articles

## Biochemistry and Biophysics

- 3595 **Active Ras Induces Heterodimerization of cRaf and B-Raf.** Christoph K. Weber, Joseph R. Slupsky, H. Andreas Kalme, and Ulf R. Rapp.
- 3599 **Detection of Increased Choline Compounds with Proton Nuclear Magnetic Resonance Spectroscopy Subsequent to Malignant Transformation of Human Prostatic Epithelial Cells.** Ellen Ackersfält, Beth R. Pflug, Joel B. Nelson, and Zaver M. Bhujwalla.
- 3604 **Mechanism of Attenuation of Skeletal Muscle Protein Catabolism in Cancer Cachexia by Eicosapentaenoic Acid.** Alison S. Whitcomb, Helen J. Smith, Joanne L. Drake, and Michael J. Tisdale.
- 3610 **Tissue Inhibitor of Metalloproteinase-4 Inhibits But Does Not Support the Activation of Gelatinase A via Efficient Inhibition of Membrane Type 1-Matrix Metalloproteinase.** Heather F. Bigg, Charlotte J. Morrison, Georgina S. Butler, Marie A. Bogoyevitch, Zhiping Wang, Paul D. Soloway, and Christopher M. Overall.

## Carcinogenesis

- 3619 **Targeted Expression of hcl-2 to Murine Basal Epidermal Keratinocytes Results in Paradoxical Retardation of Ultraviolet- and Chemical-Induced Tumorigenesis.** Heidemarie Roswith, Stefan Beissert, Christoph Mayer, Michael P. Schön, B. Gregor Wienrich, Erwin Tschachler, and Thomas S. Kupper.
- 3627 **Evidence of DNA Repair/Processing Defects in Cultured Skin Fibroblasts from Breast Cancer Patients.** Mohammed A. Hannan, Yunus Siddiqui, Assem Kostom, Mohammed N. Al-Ahadi, Mohammad A. Chaudhary, and Mohammed Kuntli.

## Endocrinology

- 3632 **Silencing and Reactivation of the Selective Estrogen Receptor Modulator-Estrogen Receptor  $\alpha$  Complex.** Hong Liu, Eun-Sook Lee, Alexander De Los Reyes, James W. Zapf, and W. Craig Jordan.

- 3640 **Transcriptional Activation of the Thyroglobulin Promoter Directing Suicide Gene Expression by Thyroid Transcription Factor-1 in Thyroid Cancer Cells.** Hiroki Shimura, Hideyo Suzuki, Asako Miyazaki, Fumihiko Furuya, Kazuyasu Ohta, Kazutaka Haraguchi, Toyohito Endo, and Toshimasa Onaya.

## Epidemiology and Prevention

- 3647 **Chemoprevention of Colon Cancer by a Glutathione Conjugate of 1,4-Phenylenedi(methylene)selenocyanate, a Novel Organoselenium Compound with Low Toxicity.** Chintalapally V. Rao, C-Q. Wang, Barbara Simi, Jose G. Rodriguez, Indranie Cooma, Karam El-Bayoumy, and Bandaru S. Reddy.

## Experimental Therapeutics

- 3653 **A Strategy for Antitumor Vascular Therapy by Targeting the Vascular Endothelial Growth Factor/Receptor Complex.** S. P. Cooke, G. M. Boxer, L. Lawrence, R. B. Pedley, D. L. R. Spencer, R. H. J. Begent, and K. A. Chester.
- 3660 **Indolomine Tyrosine Kinase Inhibitors Block Kit Activation and Growth of Small Cell Lung Cancer Cells.** Geoffrey W. Krystal, Sittsak Honsawek, David Kiewlich, Congxin Liang, Stefan Vasile, Li Sun, Gerald McMahon, and Kenneth E. Lipson.
- 3669 **Lipid Association Improves the Therapeutic Index of Lomustine [1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea] to Suppress 36h-10 Tumor Growth in Rats.** Claudette R. Bethune, Russell J. Geyer, Alexander M. Spence, and Rodney J. Y. Ho.
- 3675 **Modulation of Both Endogenous Folate and Thymidine Enhance the Therapeutic Efficacy of Thymidine Synthase Inhibitors.** Clasia L. van der Wilt, Harold H. J. Backus, Kees Smid, Lizzy Comijn, Gijbert Voerman, Dorine Wouters, Daphne A. Vosm, David G. Priest, Marlene A. Banni, Fraser Mitchell, Ann L. Jackman, Gerrit Jansen, and Godefridus J. Peters.

## Immunology

- 3682 **Intersection of Interferon and Hypoxia Signal Transduction Pathways in Nitric Oxide-induced Tumor Apoptosis.** Drory S. Tendler, Clare Bao, Tianhong Wang, Eric L. Huang, Edward A. Ratovitski, Drew A. Pardoll, and Charles J. Lowenstein.
- 3689 **Cyclophosphamide, Doxorubicin, and Paclitaxel Enhance the Antitumor Immune Response of Granulocyte/Macrophage Colony Stimulating Factor-secreting Whole-Cell Vaccines in HER-2/neu Tolerized Mice.** Jean-Pascal H. Machiels, R. Todd Reilly, Leisha A. Emens, Anne M. Ercolini, Rachel Y. Lei, Diane Weintraub, Francesca I. Okoye, and Elizabeth M. Jaffee.
- 3698 **Cancer Immunotherapy Using a DNA Vaccine Encoding the Translocation Domain of a Bacterial Toxin Linked to a Tumor Antigen.** Chien-Fu Hung, Wen-Fang Cheng, Keng-Fu Hsu, Chee-Yin Chai, Liangmei He, Morris Hung, and T-C. Wu.
- 3704 **Targeting Dendritic Cells to Enhance DNA Vaccine Potency.** Zhaoyang You, Xue Huang, Jenny Hester, Han Chong Toh, and Si-Yi Chen.

- 3712 **Immunoscintigraphy with Positron Emission Tomography: Gallium-68 Chelate Imaging of Breast Cancer Pretargeted with Bispecific Anti-MUC1/Anti-Ga Chelate Antibodies.** Jochen Schubmacher, Sepp Kaul, Gabor Klivényi, Hans Junkermann, Achim Mager, Marcus Henze, Josef Doll, Uwe Haberkorn, Folkert Ameling, and Günther Bastert.
- 3718 **High Frequency of Cytolytic T Lymphocytes Directed against a Tumor-specific Mutated Antigen Detectable with HLA Tetramers in the Blood of a Lung Carcinoma Patient with Long Survival.** Váncs Karamkás, Dider Colin, Jean-François Bourrain, Rita Chari, Joëlle Thomand, Jue Gutierrez-Rockens, Céline Goffinet, Emile Van Schaftingen, Patrick Weynants, Thierry Boon, and Pierre G. Coulie.

- 3725 **Enhanced Activation of Human T Cells via Avipox Vector-mediated Hyperexpression of a Triad of Costimulatory Molecules in Human Dendritic Cells.** MingZhu Zhu, Hiroshi Terasawa, James Guiley, Dennis Panicali, Philip Arlen, Jeffrey Schlom, and Kwong Y. Tang.

- 3735 **Interleukin 18 Transfection Enhances Antitumor Immunity Induced by Dendritic Cell-Tumor Cell Conjugates.** Dan Wen Ju, Qun Tao, Guoliang Lou, Min Bai, Long He, Yili Yang, and Xuetao Cao.

## Molecular and Biologic and Genetics

- 3741 **Growth and Gene Expression Profile Analyses of Endometrial Cancer Cells Expressing Exogenous PTEN.** Mikiyo Matsushima-Nishio, Motoko Unoki, Kenji Ono, Tatsuhiko Tsumoda, Takeo Minagishi, Hiroyuki Kuramoto, Masato Nishida, Toyomi Satoh, Toshihiro Tanaka, and Yusuke Nakamura.
- 3750 **Metastasis-associated Differences in Gene Expression in a Murine Model of Osteosarcoma.** Chand Khanna, J. Khan, P. Nguyen, J. Pehr, J. Caylor, C. Yeung, J. Trepel, P. Melzer, and L. Helman.

- 3760 **Trp-p6, a Novel Prostate-specific Gene, Is Up-Regulated in Prostate Cancer and Other Malignancies and Shares High Homology with Transient Receptor Potential Calcium Channel Proteins.** Larisa Tsavaler, Michael H. Shapiro, Stan Morkowski, and Reiner Laus.

- 3770 **Tumor Necrosis Factor  $\alpha$  Polymorphism Associated with Increased Susceptibility to Development of Adult T-Cell Leukemia/Lymphoma in Human T-lymphotropic Virus Type 1 Carriers.** Kunihito Tsukasaki, Carl W. Miller, Tetsuya Kubota, Seisho Takeuchi, Takeshi Fujimoto, Shuichi Ikeda, Masao Tomonaga, and H. Philip Koeffler.

- 3775 **Hypermutability to Ionizing Radiation in Mismatch Repair-deficient, Pms2 Knockout Mice.** Xiaoxin S. Xu, Latha Narayanan, Brady Dunklee, R. Michael Lisak, and Peter M. Glazer.

- 3781 **Ablation of p21<sup>waf1/cip1</sup> Expression Enhances the Capacity of p53-deficient Human Tumor Cells to Repair UVB-induced DNA Damage.** Jean-Philippe Therrien, Martin Loignon, Régén Drouin, and Elliot A. Drobetsky.

- 3787 **Antitumor Drug Adozelesin Differentially Affects Active and Silent Origins of DNA Replication in Yeast Checkpoint Kinase Mutants.** Yangzhou Wang, Terry A. Beeman, and David Kowalski.

- 3795 **Genome-wide Allelotyping Analysis Reveals Multiple Sites of Allelic Loss in Gallbladder Carcinoma.** Ignacio I. Wistuba, Moying Tang, Arunima Maitra, Hector Alvarez, Pablo Troncoso, Fernando Pimentel, and Adi F. Gazdar.

- 3801 **Short Mononucleotide Repeat Sequence Variability in Mismatch Repair-deficient Cancers.** Lin Zhang, Jian Yu, James K. V. Wilson, Sanford D. Markowitz, Kenneth W. Kinzler, and Bert Vogelstein.

## Tumor Biology

- 3806 **Isolation of a Novel Candidate Oncogene within a Frequently Amplified Region at 3q26 in Ovarian Cancer.** Xin-Yuan Guan, Jonathan S. T. Sham, Terence C-M. Tang, Yan Fang, Ke-Ke Huo, and Jin-Ming Yang.
- 3810 **Roles of IKK Kinases and Protein Kinase CK2 in Activation of Nuclear Factor- $\kappa$ B in Breast Cancer.** Raphaëlle Romieu-Mourer, Esther Landesman-Bollag, David C. Seldin, Abdumaged M. Traish, Frank Mercurio, and Gail E. Sosenstein.
- 3819 **N-Cadherin-mediated Intercellular Interactions Promote Survival and Migration of Melanoma Cells.** Gang Li, Kapuettu Satyamoorthy, and Meenhard Herlyn.
- 3826 **Astrocyte-specific Expression of Activated p21-ras Results in Malignant Astrocytoma Formation in a Transgenic Mouse Model of Human Gliomas.** Hao Ding, Lulu Roncar, Patrick Shannon, Xiaoli Wu, Nelson Lau, Jana Karakosa, David H. Gutmann, Jeremy A. Squire, Andras Nagy, and Abhijit Guha.

## Virology

- 3837 **Human Papillomavirus Type 16 E6 and E7 Cooperate to Enhance Epidermal Growth Factor Receptor (EGFR) mRNA Levels, Overcoming Mechanisms by which Excessive EGFR Signaling Shortens the Life Span of Normal Human Keratinocytes.** Gregory S. Akerman, William H. Tolleson, Kim L. Brown, Li Li Zysak, Elena Mourateva, Timur S. W. Engin, Annamaria Basaraba, Ann L. Coker, Kim E. Creek, and Lucia Pirisi.

## Meeting Report

- 3844 **Epithelial-Stromal Interactions and Tumor Progression: Meeting Summary and Future Directions.** Lynn M. Mainwain, Gerald R. Cunha, and Suresh Mohla.

## Obituary

- 3847 **In Memoriam: James A. Miller (1915-2000).** Allan H. Conney.

## 3849 Announcements

Future Annual Meetings of the American Association for Cancer Research  
Workshop on Pathobiology of Cancer  
Workshop on Molecular Biology in Clinical Oncology  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## 3852 Author Index



## Advances in Brief

- 3853 **In Vivo Evaluation of 5-[<sup>18</sup>F]Fluoro-2'-deoxyuridine as Tracer for Positron Emission Tomography in a Murine Pancreatic Cancer Model.** Ullrich Seitz, Martin Wagner, Andreas T. Vogt, Gerhard Glatting, Bernd Neumaier, Florian R. Grien, Roland M. Schmid, and Sven N. Reske.
- 3858 **AIIB Enhances Estrogen-dependent Induction of Cyclin D1 Expression.** Maricarmen D. Pitas-Silva, Yongfeng Shang, Joana Liu Donaher, Myles Brown, and Robert A. Weinberg.
- 3863 **The COOH Terminus of p18INK4C Distinguishes Function from p16INK4A.** Jay Gump, Saralinda Turner, and James Koh.
- 3869 **Coordinately Up-Regulated Genes in Ovarian Cancer.** Colleen D. Hough, Kathleen R. Cho, Alan B. Zonderman, Donald R. Schwartz, and Patrice J. Morin.
- 3877 **High Frequency of Promoter Hypermethylation of RASSF1A in Nasopharyngeal Carcinoma.** Kwok-Wai Lo, Joseph Kwong, Angela Bi-Yu Hui, Sylvia Yat-Yee Chan, Ka-Fai To, Andrew Siu-Chung Chan, Lillian Shuk-Nga Chow, Peter M. L. Teo, Philip J. Johnson, Dolly Poon Huang.
- 3882 **Secreted Caveolin-1 Stimulates Cell Survival/Clonal Growth and Contributes to Metastasis in Androgen-insensitive Prostate Cancer.** Salahuddin A. Tahir, Guang Yang, Shin Ebara, Terry L. Timme, Takafumi Satoh, Liang Li, Alexei Goltsov, Michael Littman, Joel D. Morriston, and Timothy C. Thompson.

## Regular Articles

## Biochemistry and Biophysics

- 3886 **Radiation-induced Genomic Rearrangements Formed by Nonhomologous End-Joining of DNA Double-Strand Breaks.** Kai Rothkamm, Martin Kuhnle, Penny A. Jeggo, and Markus Löbrich.

- 3894 **Ionizing Radiation-Induced, Mitochondria-dependent Generation of Reactive Oxygen/Nitrogen.** J. Kevin Leach, Glenn Van Tuyle, Peck-Sun Lin, Rupert Schmidt-Ullrich, and Ross B. Mikkelsen.

## Carcinogenesis

- 3902 **Tamoxifen-induced Antitumorogenic/Antiestrogenic Action Synergized by a Selective Aryl Hydrocarbon Receptor Modulator.** Andrew McDougall, Mark Wormke, James Calvin, and Jun Sun NF2.
- 3908 **Suppression of Skin Tumorigenesis in c-Jun NH2-Terminal Kinase-2-Deficient Mice.** Nanyang Chen, Masaki Nomura, Qing-Bai Shi, Wei-Ya Ma, Ann M. Bode, Lian Wang, Richard A. Flavell, and Ziqiang Dong.
- 3913 **Molecular Nature of Ultraviolet B Light-induced Deletions in the Murine Epidermis.** Moko Horiguchi, Ken-ichi Masumura, Hiroshi Ikehata, Tetsuya Ono, Yosuke Kanke, and Takahiko Nohmi.
- 3919 **Dibenzylmethane Modulates Aryl Hydrocarbon Receptor Function and Expression of Cytochromes P450 1A1, 1A2, and 1B1.** Christopher J. MacDonald, Henry P. Ciolino, and Grace Chao Yeh.
- 3925 **Mechanism of Lower Genotoxicity of Toremifene Compared with Tamoxifen.** Shinya Shibutani, Anisetti Ravinderanth, Isamu Terashima, Naomi Suzuki, Y. R. Santosh Laxmi, Yoshikazu Kanno, Masanobu Suzuki, T. Idi Apak, Jonathan J. Sheng, and Michael W. Duffell.

## Clinical Investigation

- 3932 **Prognostic Significance of Activated CD8<sup>+</sup> T Cell Infiltrations within Esophageal Carcinomas.** Karin Schumacher, Wolfgang Haensch, Claudia Rietzsch, and Peter M. Fodde.

## Endocrinology

- 3937 **Expression in Hematological Malignancies of a Glucocorticoid Receptor Splice Variant That Augments Glucocorticoid Receptor-mediated Effects in Transfected Cells.** Pierre de Jong, Christine M. Segrean, Jan W. Koper, Erik Wazner, Peter Stentveld, Albert O. Broekmans, Anne White, Iain J. Brogan, Frank H. de Jong, and Steven W. J. Lamberts.
- 3942 **Differential Regulation of Cytochrome P450 1A1 and 1B1 by a Combination of Dioxin and Pesticides in the Breast Tumor Cell Line MCF-7.** Xavier Cosmoul, Monique Drey, Cedric Robillot, and Robert Barakat.

## Epidemiology and Prevention

- 3949 **Ethnicity Delineates Different Genetic Pathways in Malignant Glioma.** Pengcheng Chen, Kenneth Aldridge, John K. Wiencke, Karl T. Kelsey, Rei Mike, Richard L. Davis, Jennifer Liu, Anna Keiser-Diaz, Michelle Takahashi, and Margaret Wrensch.
- 3955 **A Polymorphism in CYP17 and Endometrial Cancer Risk.** Christopher A. Haiman, Susan E. Hankinson, Graham A. Colditz, David J. Hunter, and Immaculata De Vivo.

## Experimental Therapeutics

- 3961 **Exisulind, a Novel Proapoptotic Drug, Inhibits Rat Urinary Bladder Tumorigenesis.** Gary A. Piazza, W. Joseph Thompson, Rifat Pannu-Kumar, Hector W. Alila, Clark M. Whitehead, Li Lin, John R. Fetter, William E. Grob, Jr., Andrew J. Klein-Szanto, Daniel R. Farnell, Isao Eto, and Clinton J. Grubbs.
- 3969 **Identification of the Transcriptional Regulatory Sequences of Human Calpain Promoter and Their Use in Targeting a Conditionally Replicating Herpes Vector to Malignant Human Soft Tissue and Bone Tumors.** Hisako Yamamura, Mito Hashio, Mika Noguchi, Youichi Sugeno, Masakazu Osakada, Noriko Hirano, Yumiko Sakai, Takahiro Yoden, Nobuhisa Awata, Nobuhito Araki, Masaharu Tsubota, Shin-ichi Miyatake, and Katsuhito Takahashi.
- 3978 **Binding of Novel Peptide Inhibitors of Type IV Collagenases to Phospholipid Membranes and Use in Liposome Targeting to Tumor Cells *In Vivo*.** Oula Penate Medina, Tim Soderlund, Liisa J. Laakkonen, Esa K.J. Tuominen, Erkki Koivunen, and Paavo K. J. Kinnunen.
- 3986 **Akt/Protein Kinase B Is Constitutively Active in Non-Small Cell Lung Cancer Cells and Promotes Cellular Survival and Resistance to Chemotherapy and Radiation.** John Bognard, Amy S. Clark, Yucheng Ni, and Philip A. Dennis.

- 3998 **Differentiation of Human Neuroblastoma by Phenylacetate Is Mediated by Peroxisome Proliferator-activated Receptor  $\gamma$ .** Shouwen Han, Randall K. Wada, and Neil Siddle.

- 4003 **Inhibition of Signal Transduction by the Hsp90 Inhibitor 17-Aallylamin-17-demethoxygeldanamycin Results in Cytoplasts and Apoptosis.** Isabelle Hostein, David Robertson, Francesca DiSandro, Paul Workman, and Paul Andrew Clarke.

- 4010 **Disruption of the EF-2 Kinase/Hsp90 Protein Complex: A Possible Mechanism to Inhibit Glioblastoma by Geldanamycin.** Jun Yang, Jin-Ming Yang, Marie Iannone, Weichang Guo, Shih, Yong Lin, and William N. Hait.

- 4017 **Synergy between Methionine Stress and Chemotherapy in the Treatment of Brain Tumor Xenografts in Athymic Mice.** Demetrius M. Kokkinakis, Robert M. Hoffman, Eugenie P. Frenkel, Jacquelyn B. Wick, Qinghong Han, Mingxu Xu, Yuying Tan, and S. Clifford Schold.

- 4024 **Clinical Concentrations of Doxorubicin Inhibit Activity of Myocardial Membrane-associated, Calcium-independent Phospholipase A2.** Jane McHowat, Luther M. Swift, Ara Anantyan, and Narine Sarvaryan.

- 4030 **Pervilleine A, a Novel Tropane Alkaloid that Reverses the Multidrug-resistance Phenotype.** Quwen Mi, Baoliang Gu, Gloria L. Silva, Daniel Lantini, Edla Lima, Heebyoung Chae, Min You, Melinda G. Hollingshead, Joseph G. Mayo, A. Douglas Kinghorn, and John M. Pezzuto.

- 4038 **Osteoprotegerin Diminishes Advanced Bone Cancer Pain.** Nancy M. Luger, Prisca Honer, Marc C. Sabino, Matthew J. Schwei, Scott D. Rogers, David B. Mach, Denis R. Chobay, and Patrick W. Mantyh.

## Immunology

- 4048 **Monoclonal Antibody 8H9 Targets a Novel Cell Surface Antigen Expressed by a Wide Spectrum of Human Solid Tumors.** Shaoh Modak, Kim Kramer, S. Humayun Gullick, Hong Feng Guo, and Nai-Kong V. Cheung.

- 4055 **Enhancement of Polymorphonuclear Cell-mediated Tumor Cell Killing on Simultaneous Engagement of Fc $\gamma$ RI (CD64) and Fc $\gamma$ RII (CD68).** Marjolein van Egmond, Annetje B. van Spriel, Hans Vermeulen, Gerwin Huis, Evert van Garderen, and Jan G. J. van de Winkel.

- 4061 **Phagocytosis of Breast Cancer Cells Mediated by Anti-MUC-1 Monoclonal Antibody, DF3, and Its Biotinylated Antibody.** Chuanwen Akewaloy, Michiaki Watanabe, Baljit Singh, Mignon Walker, Donald W. Kufe, and Daniel F. Hayes.

- 4066 **Interleukin (IL)-12 and IL-12 Gene Transfer Up-Regulate Fas Expression in Human Osteosarcoma and Breast Cancer Cells.** Elizabeth A. Laflair, Shu-Fang Jia, Laura L. Worth, Zhichao Zhou, Laurie B. Owen-Schaub, and Eugene S. Kleinman.

- 4072 **A MAGE-A1 ILA-AW201 Epitope Identified by Mass Spectrometry.** Steve Pascolo, Markus Schirle, Brigitte Gickel, Tilman Dürstee, Susanne Stumm, Simone Kayser, Amano Moris, Diethelm Walwenner, Hans-Georg Rammensee, and Stefan Sevanovic.

- 4078 **A Point Mutation in the  $\alpha$ -Actinin-4 Gene Generates an Antigenic Peptide Recognized by Autologous Cytolytic T Lymphocytes on a Human Lung Carcinoma.** Hamid Echchikri, Fahia Mami-Chouah, Isabelle Vergon, Jean-François Baurain, Vaios Karakakis, Salem Chouah, and Pierre G. Coulie.

## Molecular Biology &amp; Genetics

- 4084 **Organ-specific Activation of Actuator Protein-1 in Transgenic Mice with 12-O-Tetradecanoylphorbol-13-acetate with Different Administration Methods.** Shuping Zhong, James A. Qerally, Ann M. Bode, Masaki Nomura, Akira Kaji, Wei-Ya Ma, and Ziqiang Dong.

- 4092 **TP53 Mutations in Breast Cancer Associated with BRCA1 or BRCA2 Germline Mutations: Distinctive Spectrum and Structural Distribution.** Marc S. Greenblatt, Pierre O. Chappuis, Jeffrey P. Bond, Nancy Hanell, and William D. Foulkes.

- 4098 **Genetic Progression and Heterogeneity Associated with the Development of Esophageal Squamous Cell Carcinoma.** Mark J. Roth, Nan Hu, Michael R. Emmert-Buck, Quan-Hong Wang, Sanford M. Dawsey, Guang Li, Wen-Jie Guo, Yong-Zhen Zhang, and Philip R. Taylor.

- 4105 **The Epithelial Glycoprotein 2 (EGP-2) Promoter-driven Epithelial-specific Expression of EGF-2 in Transgenic Mice: A New Model to Study Carcinoma-directed Immunotherapy.** Pamela M. J. McLaughlin, Martin C. Harman, Wim H. A. Dokter, Bart-Jan Kreskes, Henk van der Molen, Marja G. L. Brinker, Harry H. Marcel, H. J. Rutgers, Charles H. C. M. Buys, and Lou F. M. H. de Leij.

- 4112 **Defects of DNA Mismatch Repair in Human Prostate Cancer.** Yuan Chen, Jiansong Wang, Mostafa M. Fraig, John Metcalf, William R. Turner, Nabil K. Bissada, Dennis K. Watson, and Clifford W. Schmeinfest.

- 4122 **A Simple Specific Pattern of Chromosomal Aberrations at Early Stages of Head and Neck Squamous Cell Carcinomas: PIACA but not p53 Gene as a Likely Target of 3q26-qter Gains.** Richard Redon, Danielle Muller, Krishna Culete, Kristell Wannerdörfer, Joseph Abbascis, and Stanislas du Manoir.

- 4130 **Fusion of a Novel Gene, RCC17, to the TFE3 gene in t(X;17)(p11;q25.3)-bearing Papillary Renal Cell Carcinomas.** Pierre Heimann, Hakim El Housni, Gönül Oğur, Marian A. J. Weterman, Elizabeth M. Petty, and Gilbert Vassart.

- 4136 **Dynamic, Site-specific Interaction of Hypoxia-inducible Factor-1 $\alpha$  with the von Hippel-Lindau Tumor Suppressor Protein.** Fang Yu, Sarah B. White, Quan Zhao, and Frank S. Lee.

- 4143 **Constitutive Sp1 Activity Is Essential for Differential Constitutive Expression of Vascular Endothelial Growth Factor in Human Pancreatic Adenocarcinoma.** Qian Shi, Xiangdong Le, James L. Abbruzzese, Zhihai Peng, Chao-Nan Qian, Huamei Tang, Qinghua Xiong, Baoliang Wang, Xiang-Chen Li, and Keping Xie.

- 4155 **Inactivation of p53 Sensitizes U87MG Glioma Cells to 1,3-bis-(2-Chloroethyl)-1-nitrosourea.** G. Wei Xu, Catherine L. Nutt, Magdalena C. Zlatescu, Michael Keeney, Jan Chin-Yee, and J. Gregory Cairncross.

- 4160 **Transformation Nonresponsive Cells Over Their Resistance to Lack of p65/Nuclear Factor- $\kappa$ B Activation.** Tin-Chen Hsu, Rajalakshmi Nair, Preety Tulsian, Corinne E. Camilleri, Glenn A. Hegamyer, Matthew R. Young, Nancy H. Colburn.

- 4169 **Whole Genome Amplification and High-Throughput Allelotyping Identified Five Distinct Deletion Regions on Chromosomes 5 and 6 in Microdissected Early-Stage Ovarian Tumors.** Vivian W. Wang, Debra A. Bell, Ross S. Berkowitz, and Samuel C. Mok.

- 4175 **Novel Inhibitors of Poly(ADP-ribose) Polymerase (PARP) and PARP2 Identified Using a Cell-based Screen in Yeast.** Ed Perkins, Dongyu Sun, Allen Nguyen, Suzanne Tolar, Michelle Franceschi, Homa Tanaka, Hieu Nguyen, Stuart Tugendreich, Peter Barthmaier, Joe Costo, Elaine Yeh, Silke Thode, Kurt Jarman, Ajay Jain, David Morgans, and Teri Melese.

## Tumor Biology

- 4184 **von Hippel-Lindau Protein Promotes the Assembly of Actin and Vinculin and Inhibits Cell Motility.** Masayuki Kamada, Keiji Suzuki, Yasumasa Kato, Hiwa Okada, and Taro Shuin.

- 4190 **Identification and Validation of P311 as a Glioblastoma Invasion Gene Using Laser Capture Microdissection.** Luigi Mariani, Wendy S. McDonough, Dominique E. Hoeltinger, Christian Beaudry, Elzbieta Kaczmarek, Stephen W. Coons, Alf Giese, Majed Moghaddam, Rolf W. Seiler, and Michael E. Berens.

- 4197 **Overexpression of the Retinoic Acid-responsive Gene *Straf* in Human Cancer and Its Synergistic Induction by Wnt-1 and Retinoic Acid.** Wayne Seto, Wen Jiang, David A. Tice, Bonnie Rubinfield, Philip G. Hollingshead, Sharon E. Fong, Debra L. Dugger, Thinh Pham, Daniel G. Yatsura, Terence A. Wong, J. Christopher Grimaldi, Raccapet T. Corpuz, Jennifer S. Singh, Gretchen D. Frantz, Brigitte D. Cray, W. Courtney, Ralph H. Schwall, David A. Eberhardt, Luca Rastelli, Paul Polakis, and Diane Ponnica.

- 4206 **Regulation of Tumor Angiogenesis by Oxygen-regulated Protein 150, an Inducible Endoplasmic Reticulum Chaperone.** Kentaro Orawa, Yoshitane Tsukamoto, Osamu Hori, Yasuko Kitao, Hideo Tanagi, David M. Stern, and Satoshi Ogawa.

- 4214 **Up-regulation of Cyclin-dependent Kinase 4/Cyclin D2 Expression but Down-regulation of Cyclin-dependent Kinase 2/Cyclin E in Testicular Germ Cell Tumors.** Bettina A. Schmidt, Achim Rose, Christine Stenhoff, T. Strohmer, Michael Hartmann, and Rolf Ackermann.

- 4222 **Transforming Growth Factor  $\beta$ 1 Treatment Leads to an Epithelial-Mesenchymal Transdifferentiation of Pancreatic Cancer Cells Requiring Extracellular Signal-regulated Kinase 2 Activation.** Volker Ellenrieder, Sandra F. Hecker, Wolfgang Beck, Thomas Seufferlein, Andre Menke, Claudia Ruhland, Guido Adler, and Thomas M. Gress.

- 4229 **Enhanced Invasion and Tumor Growth of Fibroblast Growth Factor Receptor-expressing MCF-7 Human Breast Cancer Cells.** Johanna K. Ruchola, Taina P. Viitanen, Eeva M. Valve, Jari A. Seppänen, Nina T. Lopenen, Jaakko J. Keskinen, Päivi T. Lakkakorpi, and Pirkko L. Hirkinen.

- 4238 **Genome-wide Hypomethylation in Hepatocellular Carcinogenesis.** Chiu-Hung Lin, Sen-Yung Hsieh, I-Shyan Shen, Wei-Chen Lee, Tse-Ching Chen, Wei-Chue Shiao, and Yun-Fan Liao.

- 4244 **Ganglioside Gp2 in Small Cell Lung Cancer Cell Lines: Enhancement of Cell Proliferation and Mediation of Apoptosis.** Shoko Yoshida, Satoshi Fukumoto, Haruhiko Kawaguchi, Shigeki Sato, Ryuzo Ueda, and Koichi Furukawa.

- 4253 **Stimulation of Tumor Growth by Human Soluble Intercellular Adhesion Molecule-1.** Yong Song Cho, Phillip N. Kim, Hao-Chuan Li, Michael Elkin, and Hynda K. Klemman.

- 4258 **Loss of Expression of a New Member of the DNAP Protein Family Confers Resistance to Chemotherapeutic Agents Used in the Treatment of Ovarian Cancer.** Vijay Shridhar, Keith C. Bible, Julie Sloan, Rajeswar Avula, Yoon Kit Lee, Kimberly Kalli, Haqie Huang, Lynn C. Hartmann, Scott H. Kaufman, and David I. Smith.

- 4266 **Reduced Tumor Oxygenation by Treatment with Vinblastine.** Gregor Sava, Mateja Krize, Marijeta Senjic, Teodora Ivanova, Katarina Beravs, Majka Cemazar, Marija Auerperger, and Harold M. Swartz.

- 4272 **Gadolinium in Human Glioblastoma Cells for Gadolinium Neutron Capture Therapy.** Gelsomina De Stasio, Patrizia Casalbore, Roberto Pallini, Benjamin Gilbert, Francesca Santa, Maria Teresa Cioti, Giancarlo Rossi, Armando Festina, Luigi Maria Larocca, Alessandro Rinaldi, Didier Perret, David W. Mogk, Paolo Perletti, Minesh P. Mehta, and Delio Mercanti.

- 4278 **The Ras Radiation Resistance Pathway.** Anjali K. Gupta, Vincent J. Bakanas, George J. Cerniglia, Yi Cheng, Eric J. Bernhard, Ruth J. Moschel, and W. Gillies McKenna.

- 4283 **Identification of Differentially Expressed Genes by Serial Analysis of Gene Expression in Human Prostate Cancer.** A. Waghray, M. Schober, F. Ferrote, F. Yao, J. Virgin, and Y. Q. Chen.

## Virology

- 4287 **Detection of JC Virus DNA Sequences and Expression of the Viral Regulatory Protein T-Antigen in Tumors of the Central Nervous System.** Luis Del Valle, Jennifer Gordon, Martha Asimakopoulou, Sabina Enam, Jennan F. Geddes, John N. Varakis, Christos D. Katsinos, Sidney Croul, and Daniel Khalil.

## Letters to the Editor

- 4294 **Correspondence re: S. E. Blutt, T. C. Polek, L. V. Stewart, M. W. Kattan, and N. L. Weigel. Cancer Res. 60: 779-782, 2000.** Gary G. Schwartz, Hal E. Loken, and Kerry L. Bernstein. Reply by Nancy L. Weigel, Sarah E. Blutt, Tara C. Polek, and LaMonica V. Stewart.

## Announcements

- Future Annual Meetings of the American Association for Cancer Research  
Workshop on Pathobiology of Cancer  
Workshop on Molecular Biology in Clinical Oncology  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## Correction

- X. Huang et al., Cancer Res. 61: 478-481, 2001.

## Author Index

## June 1, Number 11

## Review

- 4301 **Exploiting Cancer Cell Cycling for Selective Protection of Normal Cells**  
Mikhail V. Blagosklonny and Arthur B. Pardee.

## Advances in Brief

- 4306 **Progressive Decreases in Nuclear Retinoid Receptors during Skin Squamous Carcinogenesis**  
Xiao-Chun Xu, Wina Y. L. Wong, Leonard Goldberg, Susan C. Baer, John E. Wolf, William M. Ramsdell, David S. Alberts, Scott M. Lippman, and Kruben Lotan.
- 4311 **Molecular Identification of Latent Precursors in Histologically Normal Endometrium**  
George L. Mutter, Tan A. Ince, Jan P.A. Baak, Gregory A. Kust, Xiao-Ping Zhou, and Chars Eag.
- 4315 **A Mechanism for Androgen Receptor-mediated Prostate Cancer Recurrence after Androgen Deprivation Therapy**  
Christopher W. Gregory, Bin He, Raymond T. Johnson, O. Harris Ford, James L. Mohler, Frank S. French, and Elizabeth M. Wilson.
- 4320 **Discovery of New Markers of Cancer Through Serial Analysis of Gene Expression: Prostate Stem Cell Antigen Is Overexpressed in Pancreatic Adenocarcinoma**  
Pedram Argani, Christopher Rosy, Robert E. Reiter, Robb E. Wilentz, Selva R. Mungam, Steven D. Leach, Byungwoo Ryu, Halcyon G. Skinner, Michael Goggins, Elizabeth M. Jaffe, Charles J. Yeo, John L. Cameron, Scott E. Kern, and Ralph M. Hruban.
- 4325 **Uterine Adenocarcinoma in Mice Treated Neonatally with Gestinone**  
Reha R. Newbold, Elizabeth Padilla Banks, Bill Bullock, and Wendy N. Jefferson.
- 4329 **Roles of Akt and Glycogen Synthase Kinase 3 $\beta$  in the Ultraviolet B Induction of Cyclooxygenase-2 Transcription in Human Keratinocytes**  
Qingbo Tang, Melissa Gonzales, Hirayasu Inoue, and G. Tim Bowden.
- 4333 **Vitamin D Receptor Gene Polymorphisms, Insulin-like Growth Factors, and Prostate Cancer Risk: A Population-based Case-Control Study in China**  
Anand P. Chokkalingam, Katherine A. McElroy, Ya-Tang Gao, Michael Pollak, Jie Deng, Isabell A. Seiser, Joseph F. K. Mostof, Joseph F. Fraumeni, Jr., and Ann W. Hsing.
- 4337 **Expression of Nerve Growth Factor Receptors and Their Prognostic Value in Human Breast Cancer**  
Simon Decamps, Valérie Pawlowicz, Françoise Révillon, Louis Honez, Mohamed Hebbat, Bénoît Boilly, Hubert Hondermarck, and Jean-Philippe Peyrat.
- 4341 **Kinetics and Viability of Circulating Endothelial Cells as Surrogate Angiogenesis Marker in an Animal Model of Human Lymphoma**  
Silvia Monestrol, Patricia Marcano, Alessandra Burtini, Giancarlo Prateri, Chiara Dell'Agnola, Alberto Gobbi, Giovanni Martinielli, and Francesco Bertolini.
- 4345 **Genetic Alterations of Candidate Tumor Suppressor *ING1* in Human Esophageal Squamous Cell Cancer**  
Lisheng Chen, Nagahide Matsubara, Tadashi Yoshino, Takeshi Nagasaka, Naoko Hoshizuma, Yasuhiro Shirakawa, Yoshio Naomoto, Hiroshi Iizuka, Kari Rishwold, and Noriaki Tanaka.

## Regular Articles

## Carcinogenesis

- 4350 **p53 and K-ras Mutations in Lung Cancers from Former and Never-Smoking Women**  
Kuru H. Vahakangas, William P. Bennett, Katarina Castrén, Judith A. Welsh, Muhammad A. Khan, Brundhile Blomke, Michael C. R. Alavanja, and Curtis C. Harris.
- 4357 **Human Cutaneous Fatty Acid-binding Protein Induces Metastasis by Up-Regulating the Expression of Vascular Endothelial Growth Factor Gene in Rat Rara 3P Model Cells**  
Chun Jing, Carol Reesley, Christopher S. Foster, Huijun Chen, Philip S. Rudland, David C. West, Hiroshi Fujii, Paul H. Smith, and Yongqiang Ke.
- 4365 **Oxidative Stress in the Absence of Inflammation in a Mouse Model for Hepatitis C Virus-associated Hepatocarcinogenesis**  
Kyoji Moriya, Kiyotaka Nakagawa, Tomonori Shintani, Yoshimasa Nishimura, Fumie Hidayaki Miyoshi, Takeya Tsutsumi, Tomoko Miyazawa, Kotaro Ishihashi, Toshiharu Horie, Kazuhito Imai, Toru Toderoki, Satoshi Kimura, and Kazuhiko Koike.
- 4371 **Application of the National Cancer Institute International Criteria for Determination of Microsatellite Instability in Ovarian Cancer**  
Anil K. Sood, Rick Holmes, Gary J. C. Hendrix, and Richard E. Boller.

## Clinical Investigation

- 4375 **Cyclooxygenase-2 Expression in Human Gliomas: Prognostic Significance and Molecular Correlations**  
Tadashi Shono, Philip J. Tofton, Janet M. Bruner, Olabunmi Owolabi, and Frederick F. Lang.
- 4382 **Abnormal Fragile Histidine Triad (FHIT) Expression in Advanced Cervical Carcinoma: A Poor Prognostic Factor**  
Thomas C. Krivak, John W. McBroom, Jeffrey Seidman, David Venzon, Barbara Crothers, Paul J. McKoul, G. Scott Rose, Jay W. Carlson, and Michael J. Bitter.

## Endocrinology

- 4386 **Caveolin-1 Mediates Testosterone-stimulated Survival/Clonal Growth and Promotes Metastatic Activities in Prostate Cancer Cells**  
Lukun Li, Guang Yang, Shin Ebara, Takafumi Satoh, Yasutomo Nasu, Terry L. Timme, Chengzhen Ren, Jianxun Wang, Salahuddin A. Tahir, and Timothy C. Thompson.
- 4393 **<sup>111</sup>In-labeled 1,4,7,10-Tetraazacyclododecane-N,N',N'',N'''-tetraacetic Acid-Lys-Vasotocin: A New Powerful Radioligand for Oxytocin Receptor-expressing Tumors**  
Gianni Bascioli, Marco Chind, Bice Chini, Angelo Nacca, Paola Cassoni, and Giovanni Paganelli.

## Epidemiology and Prevention

- 4398 **Association of CYP1B1 Codon 432 Mutant Allele in Head and Neck Squamous Cell Cancer Is Reflected by Somatic Mutations of p53 in Tumor Tissue**  
Yen-Kun Joe, Josef Abel, Volker Harb, Peter Brode, Christine Antony, Susanne Donat, Hans-Peter Fischer, Maria Elena Ott-Pallardo, Ricardo Thier, Agapios Sachindis, Hans Vetter, Hermann-Maximilian Bolt, Claus Herberhold, and Thomas Brüning.

## Experimental Therapeutics

- 4405 **The Use of the  $\alpha$ -Plastin Promoter for Adenoviral-mediated, Tumor-specific Gene Expression in Ovarian and Bladder Cancer Cell Lines**  
Xue Yan Peng, Jong Ho Won, Thomas Rutherford, Takuma Fujii, Daniel Zeherman, Giuseppe Pizzorno, Eva Saji, John Leavitt, Barry Kaciaki, Ronald Crystal, Peter Schwartz, and Albert Dessenhoff.
- 4414 **Antitumor Effect of  $\beta$ 2-Microglobulin in Leukemic Cell-bearing Mice via Apoptosis-inducing Activity: Activation of Caspase-3 and Nuclear Factor- $\kappa$ B**  
Masaki Mori, Yasuhito Terui, Miyuki Tanaka, Hiroshi Tomizuka, Yuji Mishima, Masayuki Ikeda, Tadashi Kasahara, Masaya Uwai, Masaru Ueda, Rie Inoue, Takehito Itoh, Muneto Yamada, Hiroshi Hayasawa, Yusuke Furukawa, Yukihito Ishizaka, Keiya Orawa, and Kiyohiko Hatake.
- 4418 **The Bisphosphonate Ibandronate Promotes Apoptosis in MDA-MB-231 Human Breast Cancer Cells in Bone Metastases**  
Toru Hiraga, Paul J. Williams, Gregory R. Mundy, and Toshiyuki Yoneda.
- 4425 **Isotype-specific Ras-GTP Levels Predict the Effect of Farnesyl Transferase Inhibitors against Human Astrocytomas Regardless of Ras Mutational Status**  
Mathias M. Feldkamp, Nelson Lau, Luca Roncar, and Abhijit Guha.
- 4432 **Osteoprotegerin Inhibits Osteolysis and Decreases Skeletal Tumor Burden in Syngeneic and Nude Mouse Models of Experimental Bone Metastasis**  
Sean Morony, Casey Cappellucci, Ildiko Sarosi, David L. Lacey, Colin R. Danstan, and Paul J. Kostenuk.
- 4437 **Frequent, Moderate-Dose Cyclophosphamide Administration Improves the Efficacy of Cytosine P-450/Cytosine P-450 Reductase-based Cancer Gene Therapy**  
Youssef Jouanid and David J. Waxman.
- 4445 **Selective Targeting to the Hyperactive  $\beta$ -Catenin/T-Cell Factor Pathway in Colon Cancer Cells**  
Rui-Hong Chen and Frank McCormick.
- 4450 **The c-Jun NH<sub>2</sub>-terminal Protein Kinase/AP-1 Pathway Is Required for Efficient Apoptosis Induced by Vinblastine**  
Meiyun Fan, Mary E. Goodwin, Michael J. Birrer, and Timothy C. Chambers.
- 4459 **Cyclic Hydroxamic-acid-containing Peptide 31, a Potent Synthetic Histone Deacetylase Inhibitor with Antitumor Activity**  
Yasuhiko Komatsu, Kin-ya Tomizaki, Makiko Tsukamoto, Tamaki Kato, Norikazu Nishino, Shigeo Sato, Takao Yamori, Takashi Tsuruo, Ryohi Furumai, Minoru Yoshida, Sueharu Horinouchi, and Hideya Hayashi.
- 4467 **A Naturally Occurring Secreted Human ErbB3 Receptor Isoform Inhibits Heregulin-stimulated Activation of ErbB2, ErbB3, and ErbB4**  
Hakjoo Lee, Robert W. Akita, Mark X. Sliwkowski, and Nita J. Maile.

## Immunology

- 4474 **Specific Localization, Gamma Camera Imaging, and Intracellular Trafficking of Radiolabeled Chimeric Anti-Gp130 Ganglioside Monoclonal Antibody KM871 in SK-MEL-28 Melanoma Xenografts**  
Fook-Thean Lee, Angela Rigopoulos, Cathrine Hall, Kerrie Clarke, Stephen H. Cody, Fiona E. Smyth, Zhanqi Liu, Martin W. Brechtel, Nobuo Hamai, Edward C. Nice, Bruno Caimel, Antony W. Burgess, Sydney Welt, Gerd Ritter, Lloyd J. Old, and Andrew M. Scott.
- 4483 **Immunophenotyping of Leukemias Using a Cluster of Differentiation Antibody Microarray**  
Larissa Belov, Odette de la Vega, Cristóbal G. dos Remedios, Stephen P. Mulligan, and Richard I. Christopherson.
- 4490 **Epidermal Growth Factor Receptor-targeted Immunophenodiagnosis and Photoimmunotherapy of Oral Precancer in Vivo**  
Nikolaos S. Soukos, Michael R. Hamblin, Suzanne Keel, Richard L. Fabian, Thomas F. Deutsch, and Tatyana Vasina.
- 4497 **Synergy of Vaccine Strategies to Amplify Antigen-specific Immune Responses and Antitumor Effects**  
Douglas W. Grzeschbach, Jacqueline C. Barrientos, Jeffrey Scholt, and James W. Hodge.

## Molecular Biology &amp; Genetics

- 4506 **Molecular Cytogenetic Characterization of Head and Neck Squamous Cell Carcinoma and Refinement of 3q Amplification**  
Bhavansingh Singh, Swarna K. Gogineni, Peter G. Sacks, Ashok R. Shah, Jin-Ping Shih, Archonela Stoffel, and Pulvarti H. Rao.
- 4514 **High-Throughput Tissue Microarray Analysis of 3p25 (RAF) and 8p12 (FGFR1) Copy Number Alterations in Urinary Bladder Cancer**  
Ronald Simon, Jan Richter, Urs Wagner, André Fijan, James Brudner, Ulrich Schmid, Daniel Ackermann, Robert Maurer, Göran Alund, Hartmut Koinig, Marcus Rist, Kim Wilber, Manuel Anshabarte, Franz Hering, Thomas Hardeier, Andreas Schönerberger, Renata Flury, Peter Jäger, Jean Luc Fehr, Peter Schraml, Holger Moch, Michael J. Mihatsch, Thomas Gasser, and Guido Sauter.
- 4520 **Increased Gene Amplification in Immortal Rodent Cells Deficient for the DNA-dependent Protein Kinase Catalytic Subunit**  
Chiara Mondello, Paola Rebuzzini, Manuela Dolzan, Scott Edmondson, Guillermo E. Taccioli, and Elena Girolotto.
- 4526 **Nuclear Factor- $\kappa$ B Is Constitutively Active in C-Cell Carcinoma and Required for RET-induced Transformation**  
Leopold Ludwig, Heidi Kessler, Martin Wagner, Cuong Huang-Vu, Henning Dralle, Guido Adler, Bernhard O. Böhm, and Roland M. Schmid.
- 4536 **Detection of Differentially Expressed Genes in HeLa  $\times$  Fibroblast Hybrids Using Subtractive Suppression Hybridization**  
Satoshi Nishizuka, Hiroyuki Tsujimoto, and Eric J. Stanbridge.
- 4541 **Extensive Somatic Microsatellite Mutations in Normal Human Tissue**  
Sina Vilkkii, Jen-Lan Tsao, Ann Loukola, Minna Pyöhtinen, Outi Viernä, Riitta Herva, Lauri A. Aaltonen, and Darryl Shibata.
- 4545 **Microsatellite Marker Analysis in Screening for Hereditary Nonpolyposis Colorectal Cancer (HNPCC)**  
Anu Loukola, Katja Ekin, Päivi Lahti, Reijo Salovaara, Paula Kristi, Helmi Järvinen, Jukka-Pekka Mecklin, Virpi Launonen, and Lauri A. Aaltonen.
- 4550 **Apoptotic Triggers Initiate Translocations within the MLL Gene Involving the Nonhomologous End Joining Repair System**  
Christopher J. Betts, Michael J. Villalobos, Manuel O. Diaz, and Andrew T. M. Vaughan.

- 4556 **Loss of Expression and Aberrant Methylation of the *CDH13* (H-Cadherin) Gene in Breast and Lung Carcinomas**  
Kiyomi O. Toyooka, Shinichi Toyooka, Arvind K. Virmani, Uthappa G. Subramanyam, David M. Euhos, Michael Gilcrease, John D. Minna, and Adi F. Gazdar.

- 4561 **Atom Knock-in Mice Harboring an In-frame Deletion Corresponding to the Human *ATM* 7636del9 Common Mutation Exhibit a Variant Phenotype**  
Kevin Spring, Simone Cross, Chang Li, Dianne Waters, Liat Ben-Senior, Paul Waring, Farida Ahangari, Shan-Li Lu, Philip Chen, Hui Misko, Carol Paterson, Graham Kay, Nechama I. Smorodinsky, Yosef Shih, and Martin F. Lavin.

- 4569 **PTEN Induces G<sub>1</sub> Cell Cycle Arrest and Decreases Cyclin D3 Levels in Endometrial Carcinoma Cells**  
Xiaoyan Zhu, Chang-Hyuk Kwon, Peter W. Scholshauer, Lora Hedrick Ellerson, and Suzanne J. Baker.

## Tumor Biology

- 4576 **Relative Expression of Progesterone Receptors A and B in Endometrial Cancers of the Endometrium**  
Rebecca L. Arnet-Mansfield, Anna deFazio, Gerard V. Wain, Richard C. Jaworski, Karen Byth, Patricia A. Mote, and Christine L. Clarke.
- 4583 **Overexpression of Proteins HMG1A Induces Cell Cycle Deregulation and Apoptosis in Normal Rat Thyroid Cells**  
Monica Fede, Giovanna Maria Perantoni, Maria Teresa Berlingieri, Sabrina Battista, Gustavo Baldassarre, Nikhil Munshi, Monica Dentice, Dimitris Santos, Massimo Santoro, Giuseppe Viglietto, and Alfredo Fusco.
- 4591 **Protein Kinase C $\delta$ -mediated Phosphorylation of  $\alpha$ 6 $\beta$ 4 Is Associated with Reduced Integrin Localization to the Hemidesmosome and Decreased Keratinocyte Attachment**  
Addy Alt, Mott Obba, Luwei Li, Marina Gurshtein, Adam Belanger, Mitchell F. Deming, Toshio Kuroki, Stuart H. Yuspa, and Tamar Tenenbaum.
- 4599 **Effects of Overexpression of  $\gamma$ -Glutamyl Hydrolase on Methotrexate Metabolism and Resistance**  
Peter D. Cole, Barton A. Kamen, Richard Gorlick, Debarbata Banerjee, Angela K. Smith, Elizabeth Magill, and Joseph R. Bertino.
- 4605 **Overexpression of Sialyltransferase CMP-Sialic Acid-Gal $\beta$ 1-3GalNAc-6-*ol*-Sialyltransferase Is Related to Poor Patient Survival in Human Colorectal Carcinomas**  
Frank Schneider, Wolfgang Kemmer, Wolfgang Haensch, Gudrun Franke, Stephan Gretsche, Uwe Karsten, and Peter Michael Schlag.
- 4612 **Protein Kinase C $\alpha$  and Protein Kinase C $\delta$  Play Opposite Roles in the Proliferation and Apoptosis of Glioma Cells**  
Revital Mandil, Ely Ashkenazi, Michal Blass, Ilana Kronfeld, Gila Kazimzky, Guy Rosenthal, Felix Umansky, Patricia S. Lorenzo, Peter M. Blumberg, and Chaya Brodeur.
- 4620 **Increased Expression of UDP-Galactose Transporter Messenger RNA in Human Colon Cancer Tissues and Its Implication in Synthesis of Thomsen-Friedenreich Antigen and Sialyl Lewis X $\alpha$  Determinants**  
Kenosuke Kumamoto, Yoshiko Goto, Koji Sekikawa, Seichi Takenoshita, Nobuhito Ishida, Masao Kawakita, and Reiji Kanngai.
- 4628 **Transcriptional Silencing of Cyclooxygenase-2 by Hyper-methylation of the 5' CpG Island in Human Gastric Carcinoma Cells**  
Sang Hyun Song, Hyun-Soon Jong, Hyun Ho Choi, Hirayasu Inoue, Tadashi Tanabe, Noe Kyeong Kim, and Yung-Joe Bang.

- 4636 **Y<sub>v</sub>-Mediated Effect of Neuropeptide Y in Cancer: Breast Carcinomas as Targets**  
Jean Claude Neuf, Mathias Guggler, Beatrice Waser, and Jean-Claude Schär.

## Meeting Report

- 4642 **Melanoma Biology and Progression**  
Mechard Herlyn, Saldano Ferrone, Ze'ev Ronai, John Finerty, Richard Peiray, and Suresh Mobla.

## Announcements

- Future Annual Meetings of the American Association for Cancer Research  
Workshop on Pathobiology of Cancer  
Workshop on Molecular Biology in Clinical Oncology  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## Erratum

- J. Xu et al., Cancer Res. 61: 1561-1568, 2001

## Corrections

- G. Wurtzer et al., Cancer Res. 60: 4238-4244, 2000

## Author Index

## June 15, Number 12

## Review

- 4651 **Who is the Boss in the Retinoblastoma Family? The Point of View of *Rb2p130*, the Little Brother.** Marco G. Paggi and Antonio Giordano.

## Advances in Brief

- 4655 **Heparanase Expression in Primary and Metastatic Pancreatic Cancer.** Alexander Koliopoulos, Helmut Friess, Jörg Kleff, Xin Shi, Quan Liao, Iris Pecker, Israel Vlodavsky, Arthur Zimmermann, and Markus W. Büchler.
- 4660 **Prostate Stem Cell Antigen is Overexpressed in Human Transitional Cell Carcinoma.** Nordine Amara, Ganesh S. Palapattu, Matthew Schrage, Zhenman Gu, George V. Thomas, Fred Dorey, Jonathan Said, and Robert E. Reiter.
- 4666 **The Paired Box Domain Gene *PAK5* Is Fused to *ETV6/TEL* in an Acute Lymphoblastic Leukemia Case.** Giovanni Cazzaniga, Maria Dianotti, Sabrina Tosi, Giovanni Giudici, Alessandra Alonzi, Enrico Pogliani, Lyndal Kearney, and Andrea Biondi.
- 4671 **NT-ESO-1 Expression and Immunogenicity Associated with Transitional Cell Carcinoma: Correlation with Tumor Grade.** Takashi Kurashige, Yui Noguchi, Takashi Saika, Toshiro Ono, Yasuhiro Nagata, Achim Jungbluth, Gerd Rüter, Yao-Teng Chen, Elisabeth Stockert, Tomoyasu Tsuchida, Hiromi Kamori, Lloyd J. Old, and Eichi Nakayama.
- 4675 **Analysis of Circulating Tumor DNA in Plasma at Diagnosis and during Follow-Up of Lung Cancer Patients.** Gabriella Di Matteo, Davide Conte, Luigi Mariani, Salvatore Lo Vullo, Luca Roz, Claudia Lombardo, Marco A. Pierotti, and Luca Tavechio.
- 4679 **Transforming Growth Factor- $\beta$  Receptor Type I Gene Is Frequently Mutated in Ovarian Carcinomas.** Taiping Chen, Jason Toppitt, Ben Dehner, Bernadette Hurst, Bruce Colligan, Jackson Pemberton, Jeremy R. Graf, and Julia H. Carter.
- 4683 **Human Prostate Cancer and Benign Prostatic Hyperplasia: Molecular Dissection by Gene Expression Profiling.** Jun Luo, David J. Duggan, Yidong Chen, Jurga Sauvageot, Charles M. Ewing, Michael L. Bitter, Jeffrey M. Trent, and William B. Isaacs.
- 4689 **Promoter Hypermethylation of the DNA Repair Gene *O<sup>6</sup>-Methylguanine-DNA Methyltransferase* Is Associated with the Presence of G:C to A:T Transition Mutations in p53 in Human Colorectal Tumorigenesis.** Manel Esteller, Rosa Ana Riquelme, Minori Toyota, Gabriel Capella, Victor Moreno, Miquel Angel Peinado, Stephen B. Baylin, and James G. Herman.

## Regular Articles

## Carcinogenesis

- 4693 **Prostate Carcinomas Developing in Transgenic Rats with SV40 T Antigen Expression under Probasin Promoter Control Are Strictly Androgen Dependent.** Makoto Asamoto, Naomi Hatakeyama, Young-Man Cho, Sanoru Takahashi, Yoshinori Ikeda, Katsumi Imaida, and Tomoyuki Shirai.
- 4701 **Potential of Nitric Oxide-induced Apoptosis of MDA-MB-468 Cells by Farnesyltransferase Inhibitors: Implications in Breast Cancer.** Sheila Pervin, Rajan Singh, Chia-Ling Gau, Hironori Edamura, Fuyuhiko Tamanoi, and Gautam Chaudhuri.
- 4707 **Cytokine and Cyclooxygenase-2 Protein in Brain Areas of Tumor-bearing Mice with Prostanoid-related Anorexia.** Wenhua Wang, Christina Lönnrot, Elisabeth Ståhl, and Kent Lundholm.
- 4716 **Eradication of Colorectal Xenografts by Combined Radioimmunotherapy and Combinations of A-4 3-O-Phosphate, R. Barbara Polley, Sally A. Hill, Geoffrey M. Boxer, Aiden A. Flynn, Robert Bogen, Rebecca Watson, Jason Dearing, David J. Chaplin, and Richard H. J. Begent.**
- 4723 **Apoptosis Induction in Cancer Cells by a Novel Analogue of 6-[3-(4-Adamantyl)-4-hydroxyphenyl]-2-naphtholcarboxylic Acid Lacking Retinoid Receptor Transcriptional Activation Activity.** Marcia I. Dawson, Peter D. Hobbs, Valerie J. Peterson, Mark Ledt, Christopher W. Lange, Chia-Feng Guo-quan Chen, Jian Gu, Hui Li, Siva Kumar Kollari, Xiao-xun Zhang, Yuxiang Zhang, and Joseph A. Fontana.

## Advances in Brief

- 4937 **Extraction of 5-Fluorouracil by Tumor and Liver: A Noninvasive Positron Emission Tomography Study of Patients with Gastrointestinal Cancer.** Eric O. Aboagye, Azeem Saleem, Vincent J. Cunningham, Safiye Osman, and Patricia M. Price.
- 4942 **Mutations of Tumor Necrosis Factor-related Apoptosis-inducing Ligand Receptor 1 (*TRAIL-R1*) and Receptor 2 (*TRAIL-R2*) Genes in Metastatic Breast Cancers.** Min Sun Shin, Hong Sug Kim, Sung Hyung Lee, Won Sang Park, Su Young Kim, Jik Young Park, Jong Heun Lee, Sang Kyu Lee, Shi Nae Lee, Sang Seol Jung, Ji Youn Han, Hyang Kim, Jung Young Lee, and Nam Jin Yoo.
- 4947 **Loss of Imprinting of *Irf2l3*-like Growth Factor-*II* in Wilms' Tumor Commonly Involves Altered Methylation but Not Mutations of *CTCF* or Its Binding Site.** Hengmi Cui, Emily L. Niemitz, Jason D. Ravenel, Patrick Onyango, Sheri A. Brandenburg, Victor V. Lobanov, and Andrew P. Feinberg.
- 4951 **Structural Analysis of the 17q22-23 Amplicon Identifies Several Independent Targets of Amplification in Breast Cancer Cell Lines and Tumors.** Guo-jun Wu, Colleen Sinclair, Shannon Hinson, James N. Ingle, Patrick C. Roche, and Fergus J. Couch.
- 4956 **Formation of Intracranial Tumors by Genetically Modified Human Astrocytes Defines Four Pathways Critical in the Development of Human Anaplastic Astrocytoma.** Yukihiko Sonoda, Tomoko Ozawa, Yuichi Hirose, Ken D. Aldape, Martin McMahon, Mitchel S. Berger, and Russell O. Pieper.

- 4731 **Reveratrol Induces Extensive Apoptosis by Depolarizing Mitochondrial Membranes and Activating Caspase-9 in Acute Lymphoblastic Leukemia Cells.** Jan Dorrie, Harald Gerzauer, Yvonne Wachter, and Susan J. Zimm.

- 4740 **The Cell Transmembrane pH Gradient in Tumors Enhances Cytotoxicity of Specific Weak Acid Chemotherapeutics.** Sergey V. Kozin, Pavel Shkharin, and Leo E. Gerweck.

- 4744 **Trastuzumab (Herceptin), a Humanized Anti-HER2 Receptor Monoclonal Antibody, Inhibits Basal and Activated HER2 Endocytosis Cleavage in Breast Cancer Cells.** Miguel A. Molina, Jorge Codony-Servat, Joan Albanell, Federico Rojo, Joaquín Arribas, and Jose Baselga.

## Immunology

- 4750 **High Affinity Restricts the Localization and Tumor Penetration of Single-Chain Fv Antibody Molecules.** Gregory P. Adams, Robert Schier, Adrian M. McCall, Heidi H. Simmons, Eva M. Horak, R. Katherine Alpmugh, James D. Marks, and Louis M. Weiner.
- 4756 **Activated Granulocytes and Granulocyte-derived Hydrogen Peroxide Are the Underlying Mechanism of Suppression of T-Cell Function in Advanced Cancer Patients.** Jan Schmelzer and Oliver J. Finn.
- 4761 **Generation of Cytotoxic T Lymphocytes against Native and Altered Peptides of Human Leukocyte Antigen-A\*0201 Restricted Epitopes from the Human Epithelial Cell Adhesion Molecule.** Andreas Trojan, Mathias Witzens, Joachim L. Schultze, Robert H. Vonderheide, Sabine Harig, Angela M. Krackhardt, Rolf A. Stahel, and John G. Gribben.
- 4766 **Regulatory CD4<sup>+</sup>CD25<sup>+</sup> T Cells in Tumors from Patients with Early-Stage Non-Small Cell Lung Cancer and Late-Stage Ovarian Cancer.** Edward Y. Woo, Christina S. Chu, Theresa J. Goletz, Katta Schlegler, Heidi Yeh, George Coukos, Stephen C. Rubin, Larry R. Kaiser, and Carl H. June.
- 4773 **Tumor-reactive T Helper Cells Recognize a Promiscuous MAGE-A3 Epitope Presented by Various Major Histocompatibility Complex Class II Alleles.** Hironobu Kobayashi, Yongsheng Song, Dave S. B. Hoon, Ettore Appella, and Esteban Celis.

## Molecular Biology and Genetics

- 4779 **Transduction of Antisense Cyclin D1 Using Two-step Gene Transfer Inhibits the Growth of Rat Hepatoma Cells.** Hirofumi Uto, Akio Ide, Akihito Moriwaki, Yukiko Onaga, Kenji Nagata, Masaki Onaga, Yoshitoku Tahara, Takeshi Hori, Shuichi Hirano, Katsuhiko Hayashi, and Hirohito Tsubouchi.
- 4784 **Limitations of the Reporter Green Fluorescent Protein under Simulated Tumor Conditions.** Claudia Coralli, Maja Cemazar, Chrysou Kanthou, Gillian M. Tozer, and Gaki U. Dachs.
- 4791 **A Novel Mechanism for Chaperone-mediated Tyrosine Regulation during Prostate Cancer Progression.** Ali Akalin, Lynne W. Elmore, Heidi L. Forsythe, Barbara A. Amaker, Eric D. McCollum, Peter S. Nelson, Joy L. Ware, and Shawn E. Holt.
- 4797 **Molecular Profiling of Transformed and Metastatic Murine Squamous Carcinoma Cells by Differential Display and cDNA Microarray Reveals Altered Expression of Multiple Genes Related to Growth, Apoptosis, Angiogenesis, and the NF- $\kappa$ B Signaling Pathway.** Gang Dong, Elena Loukina, Zhong Chen, Lisa Gangi, Tatyana I. Chanturiz, Edilson T. Liu, and Carter Van Waeles.
- 4809 **MAGE-E1, a New Member of the Human Glioma-associated Antigen Gene Family and its Expression in Human Glioma.** Manabu Sasaki, Kensuke Nakahira, Yozo Kawano, Hiromichi Katakura, Toshiki Yoshimine, Keiji Shimizu, Seung U. Kim, and Kazuhiro Ikemasa.
- 4815 **VHL and FHIT Locus Loss of Heterozygosity Is Common in All Renal Cancer Morphotypes but Differs in Pattern and Prognostic Significance.** Marija Velickovic, Brett Delahunt, Stephan Störkel, and Stefan K. G. Grebe.
- 4820 **Cytosine Methylation Regulates Glutathione S-Transferase P1 (*GSTP1*) Gene Expression in Human Prostate Cancer Cells.** Rakesh Singal, Jane van Wert, and Monuj Basubabu.
- 4827 **Fragile Histidine Triad Expression Delays Tumor Development and Induces Apoptosis in Human Pancreatic Cancer.** Kristoffel R. Dumon, Hideshi Ishii, Andrea Vecchiarelli, Francesco Trapasso, Gustavo Baldassare, Fatima Chakrini, Teresa Druck, Ernest F. Rosato, Noel N. Williams, Raffaele Buffa, Matthew J. Daring, Kay Huebner, and Carlo M. Croce.
- 4837 **Induction of Anoxia and Suppression of Human Ovarian Tumor Growth in Vivo by Down-Regulation of Bcl-X<sub>L</sub>.** Andrea Frankel, Kirill Rosen, Jorge Filmus, and Robert S. Kerbel.

## July 1, Number 13

- 4961 **Epithelial Cancer Cell Migration: A Role for Chemokine Receptors?** Chris J. Scotton, Julia L. Wilson, David Mitchell, Gordon Stamp, and Frances R. Balkwill.
- 4966 **Dynamic Micro-Magnetic Resonance Imaging of Liver Micrometastasis in Mice with a Novel Liver Macromolecular Magnetic Resonance Contrast Agent DAB-AmB4-UBAM-GdCl<sub>3</sub>.** Hisataka Kobayashi, Tetsuo Suga, Satomi Kawamoto, Noriko Sato, Akira Hiraga, Takayoshi Ishimori, Junji Konishi, Kaori Togashi, and Martin W. Brechbiel.
- 4971 **Monitoring Response to Convection-enhanced Tactol Delivery in Brain Tumor Patients Using Diffusion-weighted Magnetic Resonance Imaging.** Yael Mador, Yiftach Roth, Zvi Lidar, Tali Noga, Raphael Pfeffer, Stephan E. Maier, Meir Fabel, Dvora Naas, Moshe Hadani, Arie Orenstein, Jack S. Cohen, and Zvi Ram.
- 4974 **The Tumor Suppressor Candidate p3<sup>ING1</sup> Mediates Repair of UV-Damaged DNA.** K. John Cheung Jr., David Mitchell, Paul Lin, and Gang Li.
- 4978 **Loss of Focal Adhesion Kinase (FAK) Inhibits Epidermal Growth Factor Receptor-dependent Migration and Induces Aggregation of NH2-Terminal FAK in the Nucleus of Apoptotic Glioblastoma Cells.** Graham Jones, Joel Machado, Jr., and Adrian Merlo.
- 4982 **Polyomorphisms in the Prostate Cancer Susceptibility Gene *HPC2/ELAC2* in Multiplex Families and Healthy Controls.** Brian K. Suarez, Daniela S. Gerhard, Jennifer Lin, Beth Haber, Loan Nguyen, Niki K. Kesteron, and William J. Catalano.
- 4985 **Regulation of PTEN Binding to MAGI-2 by Two Putative Phosphorylation Sites at Threonine 382 and 383.** Tatiana Tolacheva, Manoranjan Boddapati, Anthony Sarfiz, Kunihito Tsuchida, Alex C. Kimmelman, and Andrew M.-L. Chan.

- 4842 **Homology-directed DNA Repair, Mitomycin-C Resistance, and Chromosome Stability Is Restored with Correction of a *Brcal* Mutation.** Mary Ellen Morynash, Tracy Y. Cui, and Maria Jasin.

## Tumor Biology

- 4851 **The Role of Thomsen-Friedenreich Antigen in Adhesion of Human Breast and Prostate Cancer Cells to the Endothelium.** Vladislav V. Glimsky, Gennadi V. Glimsky, Kate Rittenhouse-Olson, Margaret E. Huffel, Olga V. Glimskii, Susan L. Deutscher, and Thomas P. Quinn.
- 4858 **Tetrasomy Is Induced by Human Papillomavirus Type 18 E7 Gene Expression in Keratinocyte Raft Cultures.** Shirley A. Southern, Francisco Noya, Craig Meyers, Thomas R. Broker, Louise T. Chow, and C. Simon Herrington.
- 4864 **Fas-mediated Apoptosis in Neuroblastoma Requires Mitochondrial Activation and Is Inhibited by FLICE Inhibitor Protein and bcl-2.** Vassiliki Poulaki, Nicholas Mitsiades, Maria E. Romero, and Maria Tsoukas.
- 4873 **In Vivo Molecular Imaging of Met Tyrosine Kinase Growth Factor Receptor Activity in Normal Organs and Breast Tumors.** Miriam Shalunzaru, Rina Abramowitz, Tammar Kushnir, Galia Tsarfaty, Michal Ravid-Megido, Judith Horev, Rotem Ron, Yacov Itzhak, and Ilan Tsarfaty.
- 4879 **Nonsteroidal Anti-Inflammatory Drugs Induce Apoptosis in Esophageal Cancer Cells by Restoring 15-Lipoxygenase-1 Expression.** Imad Shattari, Xiaochun Xu, Dongping Chen, Reuben Loran, Jeffrey S. Morris, Susan M. Fischer, and Scott M. Lippman.
- 4885 **Inhibition of Epidermal Growth Factor-induced RhoA Translocation and Invasion of Human Pancreatic Cancer Cells by 3-Hydroxy-3-methylglutaryl-coenzyme A Reductase Inhibitors.** Toshiyuki Kusama, Mutsuko Mukai, Tetsu Iwasaki, Masaharu Tatsu, Yoshitomo Matsumoto, Hitoshi Akedo, and Hiroyuki Nakamura.
- 4892 **Down-Regulation of the erbB-2 Receptor by Trastuzumab (Herceptin) Enhances Tumor Necrosis Factor-related Apoptosis-inducing Ligand-mediated Apoptosis in Breast and Ovarian Cancer Cell Lines that Overexpress erbB-2.** Mauricio Cuello, Seth A. Etenberg, Amy S. Clark, Maccon M. Keane, Reuben H. Posner, Marion M. Nas, Phillip A. Dennis, and Stan Lipkowitz.
- 4901 **Constitutive I $\kappa$ B Kinase Activity Correlates with Nuclear Factor- $\kappa$ B Activation in Human Melanoma Cells.** Jiongming Yang and Ann Richmond.
- 4910 **c-myc/p53 Interaction Determines Sensitivity of Human Colon Carcinoma Cells to 5-Fluorouracil in Vitro and in Vivo.** Diego Arango, Georgia A. Comer, Scott Wadler, Paul J. Catalano, and Leonard H. Augenlicht.
- 4916 **A Novel *Nras* Mutation in Malignant Melanoma Is Associated with Excellent Prognosis.** Anouk Demunter, Mohammad Reza Ahmadian, Louis Liebrecht, Marguerite Stas, Mathijs Baens, Klaus Schelfke, Hugo Degref, Chris De Wolf-Peters, and Joost J. van den Oord.

## Special Article

- 4923 **A White Paper: The Product of a Pancreas Cancer Think Tank.** Scott Kern, Ralph Hruban, Michael A. Hollingsworth, Randall Brand, Thomas E. Adrian, Elizabeth Jaffee, and Margaret A. Tempero.

## 4933 Announcements

Future Annual Meetings of the American Association for Cancer Research  
Workshop on Pathobiology of Cancer  
Workshop on Molecular Biology in Clinical Oncology  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## 4935 Errata

P. Dubey et al., *Cancer Res.* 61: 3256-3261, 2001  
Y. Sumitani et al., *Cancer Res.* 61: 1776-1780, 2001

## 4936 Author Index

- 4990 **DNA Damage-activated Kinase Chk2 Is Independent of Proliferation or Differentiation Yet Correlates with Tissue Biology.** Claudia Lukas, Jitna Bartkova, Lucia Latella, Jacob Falck, Niels Møller, Tine Schröder, Maxwell Sehested, Jiri Lukas, and Jiri Bartek.

## Regular Articles

## Biochemistry and Biophysics

- 4994 **Runt-related Gene 2 in Endothelial Cells: Inducible Expression and Specific Regulation of Cell Migration and Invasion.** Lixin Sun, Michele Viole, and Antonino Passaniti.

## Carcinogenesis

- 5002 **Inhibitory Effects of Orally Administered Green Tea, Black Tea, and Caffeine on Skin Carcinogenesis in Mice Previously Treated with Ultraviolet B Light (High-Risk Mice): Relationship to Decreased Tissue Fat.** Yao-Feng Lin, You-Rong Lou, Yong Lin, Weichang Joe, Shih, Min-Tuan Huang, Chung S. Yang, and Allan H. Conney.
- 5010 **Qualitative and Quantitative Relationship between Dysplastic Aberrant Crypt Foci and Tumorigenesis in the *Min/+* Mouse Colon.** Jan Erik Paulsen, Inger-Lise Steffensen, Else Mari Loberg, Trine Husøy, Ellen Samøe, and Jan Alexander.
- 5016 **Hepatic Hyperplasia in Noncirrhotic Fatty Livers: Is Obesity-related Hepatic Steatosis a Premalignant Condition?** Shi-Qi Yang, Hui Zhi Lin, Jiawen Huang, Vadappuram P. Chacko, and Anna Mae Diehl.



## Clinical Investigations

- 5024 **Tubulin Detyrosination Is a Frequent Occurrence in Breast Cancers of Poor Prognosis.** Agnes Lialchère, Laurence Lallouchère, Isabelle Trépoix, Nadine Peloux, Charles Dumontet, Alain Brémond, Meng-Hong Pan, Raoul Payan, Jürgen Wehlend, Robert-Louis Margolis, and Didier Job.

- 5028 **Increased Level of Stromal Cell-Derived Factor-1 mRNA in Peripheral Blood Mononuclear Cells from Children with AIDS-related Lymphoma.** Shuzuko Sei, Dennis P. O'Neill, Sean K. Stewart, Quan-yan Yang, Mutsuko Kamagai, Anne Marie Boler, Melissa A. Aldre, Sheryl L. Zwerisk, Lauren V. Wood, David J. Venzon, and Ian T. Magrath.

## Endocrinology

- 5038 **Conversion from a Paracrine to an Autocrine Mechanism of Androgen-stimulated Growth during Glutathione Transformation of Prostatic Epithelial Cells.** Jin Gao, Julia T. Arnold, and John T. Isaacs.

- 5045 **Soy Diets Containing Varying Amounts of Genistein Stimulate Growth of Estrogen-dependent (MCF-7) Tumors in a Dose-dependent Manner.** Clinton D. Allred, Kimberly F. Allred, Young H. Ju, Suzanne M. Virant, and William G. Helferich.

## Epidemiology and Prevention

- 5051 **Association of NAT7 and NAT2 Polymorphisms to Urinary Bladder Cancer: Significantly Reduced Risk in Subjects with NAT7\*10.** Ingolf Cascorbi, Ivar Roots, and Jürgen Brockmüller.

## Experimental Therapeutics

- 5057 **Inhibition of Fibroblast Growth Factor-2-Induced Vascular Tumor Formation by the Acrylic Nucleoside Phosphate Cidofovir.** Sandra Lickens, Johan Neyts, Erik De Clercq, Erik Verheijen, Domenico Ribatti, and Marco Pincet.

- 5065 **Zinc-65 Imaging of Rat Brain Tumors.** Atsushi Takeda, Haruna Tamano, Shuichi Enomoto, and Naoto Oka.

- 5070 **Lowering the Isoelectric Point of the Fc Portion of Recombinant Immunotoxins Leads to Decreased Nonspecific Animal Toxicity without Affecting Antitumor Activity.** Masanori Onda, Satoshi Nagata, Yasuo Tsumumi, James J. Vincent, Qing-cheng Wang, Robert J. Kreiman, Byungkook Lee, and Ira Pastan.

- 5078 **Sensitization of Human Tumor Cells to CPT-11 via Adenoviral-mediated Delivery of a Rabbit Liver Carboxylesterase.** Monika Wierdl, Christopher L. Morton, James K. Weeks, Mary K. Danks, Linda C. Harris, and Philip M. Potter.

- 5083 **A Virus-derived Enzyme Prodrug Therapy Approach to Purging Neuroblastoma Cells from Hematopoietic Cells Using Adenovirus Encoding Rabbit Carboxylesterase and CPT-11.** Mandy M. Meck, Monika Wierdl, Lars M. Wagner, Rebecca A. Butler, Sylvie M. Guichard, Erik J. Krull, Linda C. Harris, Philip M. Potter, and Mary K. Danks.

- 5090 **Acquired Resistance to the Antitumor Effect of Epidermal Growth Factor Receptor-blocking Antibodies *in Vivo*: A Role for Altered Tumor Angiogenesis.** Alicia Viloria-Petit, Tania Crombet, Serge Jothy, Daniel Hicklin, Peter Bohlen, Jean Marc Schlaeppe, Jusz Rak, and Robert S. Kerbel.

- 5102 **N-4-Hydroxyphenylretinamide Elevates Ceramide in Neuroblastoma Cell Lines by Coordinate Activation of Serine Palmitoyltransferase and Ceramide Synthase.** Hongtao Wang, Barry J. Maurer, C. Patrick Reynolds, and Myles C. Cabot.

- 5106 **Pharmacological Inhibitors of the Mitogen-activated Protein Kinase (MAPK) Kinase/MAPK Cascade Interact Synergistically with UCN-01 to Induce Mitochondrial Dysfunction and Apoptosis in Human Leukemia Cells.** Yun Dai, Chunrong Yu, Victor Singh, Lin Tang, Zhiliang Wang, Robert McIntyre, Paul Dent, and Steven Grant.

- 5116 **Retrovirus-mediated Expression of the Base Excision Repair Proteins, Formamidopyrimidine DNA Glycosylase or Human Oxyguanine DNA Glycosylase, Protects Hematopoietic Cells from N,N'-Triethylthiophosphoramide (thioTEPA)-induced Toxicity *in Vivo* and *in Vitro*.** Masayoshi Kobune, Yi Xu, Christopher Baum, Mark R. Kelley, and David A. Williams.

## Advances in Brief

- 5331 **Frequent Loss of Estrogen Receptor- $\beta$  Expression in Prostate Cancer.** Lisa G. Horvath, Susan M. Henshall, C-sun Lee, Darren R. Head, David I. Quinn, Sari Makela, Walter Delgado, David Golovsky, Phillip C. Bremner, Gordon O'Neill, Raji Koorn, Phillip D. Stricker, John J. Grygiel, Jan-Ake Gustafsson, and Robert L. Sutherland.

- 5336 **Comparative Analyses of Transcription Delivery and Expression in Tumors Inoculated with a Replication-conditional or -defective Viral Vector.** Tomotaga Ichikawa and E. Antonio Chiocca.

- 5340 **Amplification of Urokinase Gene in Prostate Cancer.** Merja A. Helenius, Ossi R. Saramäki, Marika J. Linja, Teuvo L. J. Tammela, and Tapio Visakorpi.

- 5345 **Amplification of *HER-2/neu* and *Topoisomerase II $\alpha$*  in Primary and Metastatic Breast Cancer.** Minna Tanner, Päivi Järvinen, and Jorma Isola.

- 5349 **Growth Suppression of Intracranial Xenografted Glioblastomas: Overexpressing Mutant Epidermal Growth Factor Receptors by Systemic Administration of Monoclonal Antibody (mAb) 806, a Novel Monoclonal Antibody Directed to the Receptor.** Kanahiko Mishima, Terrance G. Johns, Rodney B. Lawlor, Andrew M. Scott, Elizabeth Stockert, Achim A. Jungbluth, Xiang-Dong Ji, Palma Savarona, Joseph R. Voland, Lloyd J. Old, H.-J. Su Huang, and Webster K. Cavenee.

- 5355 **Monoclonal Antibody 806 Inhibits the Growth of Tumor Xenografts Expressing Either the *deL-7* or Amplified Epidermal Growth Factor Receptor (EGFR) but not Wild-Type EGFR.** Rodney B. Lawlor, Terrance G. Johns, Carmel Murren, H.-J. Su Huang, Webster K. Cavenee, Gerd Ritter, Lloyd J. Old, Antony W. Burgess, and Andrew M. Scott.

- 5362 **Reduced Expression and Impaired Kinase Activity of a Cdk2 Mutant Identified in Human Lung Cancer.** Shuei Matsuka, Taka Nakagawa, Akira Masuda, Nobuhito Haruki, Stephen J. Elledge, and Takashi Takahashi.

- 5366 **DNA Polymerase  $\alpha$ , Implicated in Spontaneous and DNA Damage-induced Mutagenesis, Is Overexpressed in Human Cancer.** Jiyang O-Wang, Kiyoko Kawamura, Yoji Tada, Haruo Ohmori, Hideki Kimura, Shigeru Sakiyama, and Masatoshi Tagawa.

- 5126 **Immunosuppressive Effects of 131I-Anti-CD45 Antibody in Un-sensitized and Donor Antigen-presentation H2-matched, Minor Antigen-mismatched Murine Transplant Models.** Katherine L. Ruffner, Paul J. Martin, Scott Huestell, Cynthia Nourigat, Darrell R. Fisher, Irwin D. Bernstein, and Dana C. Matthews.

## Immunology

- 5132 **Proliferative Activity of Intratumoral CD8<sup>+</sup> T-Lymphocytes As a Prognostic Factor in Human Renal Cell Carcinoma: Clinicopathologic Demonstration of Antitumor Immunity.** Osamu Nakano, Makoto Sato, Yoshiaki Naito, Kenichi Suzuki, Seichi Ohtsuka, Masataka Aizawa, Yasuyoshi Suzuki, Ichiro Shintaku, Hiroshi Nagura, and Haruo Ohtani.

- 5137 **Rituximab Inactivates Signal Transducer and Activation of Transcription 3 (STAT3) Activity in B-Non-Hodgkin's Lymphoma through Inhibition of the Interleukin 10 Autocrine/Paracrine Loop and Results in Down-Regulation of Bcl-2 and Sensitization to Cytotoxic Drugs.** Steve Alas and Benjamin Bonavida.

- 5145 **Somatically Mutated Regions of Immunoglobulin on Human B-Cell Lymphomas Code for Peptides That Bind to Autologous Major Histocompatibility Complex Class I, Providing a Potential Target for Cytotoxic T Cells.** Clair S. Gricks, Eira Rawlings, Letizia Foroni, J. Alejandro Madrigal, and Peter L. Amlot.

- 5153 **Combinatorial Peptide Libraries as an Alternative Approach to the Identification of Ligands for Tumor-reactive Cytolytic T Lymphocytes.** Clemencia Pimila, Verena Roldo-Guado, Valerie Dauter, Philippe Guillaume, Richard Simon, Yindong Zhao, Richard A. Houghton, Jean-Charles Corinti, Pedro Romero, and Danilo Valmori.

- 5161 **Identification of T Helper Epitopes from Prostatic Acid Phosphatase.** Douglas G. McNeil, Lan D. Nguyen, and Mary L. Disis.

## Molecular Biology and Genetics

- 5168 **Identification of Gene Expression Profiles That Predict the Aggressive Behavior of Breast Cancer Cells.** Deborah A. Zajchowski, Marty F. Bartholm, Yan Gong, Lynn Webster, Hsiao-Lai Liu, Alexander Muntchkin, Catherine Beaulieu, Susan Harvey, Stephen P. Eisher, and Paul H. Johnson.

- 5179 **Constitutional Genomic Instability with Inversions, Duplications, and Amplifications in 9p23-24 in BRCA2 Mutation Carriers.** Larissa Saveyeva, Andrea Claus, Isabel Matzner, Peter Schlegel, Werner Hofmann, Siegfried Scherneck, Barbara Weber, and Manfred Schwab.

- 5186 **Genetic Evidence for Early Divergence of Small Functioning and Nonfunctioning Endocrine Pancreatic Tumors: Gain of 9q24 Is an Early Event in Insulinomas.** Ernst J. M. Seal, Alexander F. Scheidegger, Jianming Zhao, Claudia Matter, Parvina Samadpour, Jürgen Roth, Philipp U. Heitz, and Paul Komminoth.

- 5193 **Role of the hMLH1 DNA Mismatch Repair Protein in Fluoropyrimidine-mediated Cell Death and Cell Cycle Responses.** Mark W. Wagner, Hwa-Shin Hwang, Timothy J. Kinsella, and David A. Boothman.

- 5202 **Molecular Mechanisms of Transcriptional Control of *bcl-2* and *c-myc* in Follicular and Transformed Lymphoma.** Magdalena Arcinas, Caroline A. Heckman, John W. Meheew, and Linda M. Boxer.

## Tumor Biology

- 5207 **Hyaluronan Synthase 3 Overexpression Promotes the Growth of TSU Prostate Cancer Cells.** Ningling Liu, Feng Gao, Zeqiu Han, Xueming Xu, Charles B. Underhill, and Lurong Zhang.

- 5215 **Constitutive Activation of Hypoxia-inducible Genes Related to Overexpression of Hypoxia-inducible Factor-1 $\alpha$  in Clear Cell Renal Carcinomas.** Michael S. Wiesener, Philine M. Münchenhagen, Irina Berger, Neil V. Morgan, Jan Roigas, Andreas Schwietz, Jan Steffen Jürgensen, Gerd Gruber, Patrick H. Maxwell, Stefan A. Löning, Ulrich Frei, Eamonn R. Maher, Hermann-Josef Gröne, and Kai-Uwe Eckardt.

- 5223 **Global Analysis of Gene Expression in Invasion by a Lung Cancer Model.** Jeremy J. W. Chen, Kianan Peck, Tse-Ming Hong, Shuen-Chen Yang, Yuh-Ping Shih, Shih-Shih Shih, Ren Wu, Jing-Ling Cheng, Steve R. Roffler, Cheng-Wen Wu, and Pan-Chyr Yang.

## July 15, Number 14

- 5370 **Cloning and Characterization of a Human Polyamine Oxidase That Is Inducible by Polyamine Analogue Exposure.** Yanlin Wang, Wendy Devereux, Patrick M. Woster, Tracy Murray Stewart, Amy Hacker, and Robert A. Casero, Jr.

- 5374 **Fusion of the Homeobox Gene *HLXB9* and the *ETV6* Gene in Infant Acute Myeloid Leukemias with the t(7;12)(q36;p13).** H. Bena Beverloo, Ioannis Panagopoulos, Magareth Isaksson, Elisabeth van Wering, Ellen van Drunen, Annelies de Klen, Bertil Jonsson, and Rosalyn Slater.

- 5378 **Repair of 8-Oxododeoxyguanosine Lesions in Mitochondrial DNA Depends on the Oxoguanine DNA Glycosylase (OGG1) Gene and 8-Oxoguanine Accumulates in the Mitochondrial DNA of OGG1-defective Mice.** Nadja C. de Souza-Pinto, Lars Eide, Barbara A. Hogue, Tanja Thybo, Tina Stevnsner, Erling Seeberg, Arne Klingstad, and Vilhelm A. Bohr.

## Regular Articles

## Biochemistry &amp; Biophysics

- 5382 **Overexpression of Mitochondrial Manganese Superoxide Dismutase Protects against Radiation-induced Cell Death in the Human Hepatocellular Carcinoma Cell Line HLE.** Shigehito Morono, Hideyuki J. Majima, Masaki Ebura, Hirotsugu Kato, Futoshi Hirai, Shizuko Kakimura, Chizuru Yamaguchi, Toshikazu Ozawa, Tetsuo Nagano, Hirohiko Tsuji, and Hiromitsu Saitoh.

## Carcinogenesis

- 5389 **Hepatocellular Carcinoma Results from Chronic Cyclin D1 Overexpression in Transgenic Mice.** Natasha G. Deane, Monica A. Parker, Radhika Aramandla, Lisa Diehl, Woo-Jung Lee, M. Kay Washington, Lillian B. Nanney, Yu Shyr, and Daniel Beauchamp.

- 5396 **Extremely Low-Dose Ionizing Radiation Causes Activation of Mitogen-activated Protein Kinase Pathway and Enhances Proliferation of Normal Human Diploid Cells.** Keiji Suzuki, Seiji Kodama, and Masami Watanabe.

- 5321 **An Intact Overexpressed E-cadherin/ $\alpha$ -Catenin Axis Characterizes the Lymphovascular Emboli of Inflammatory Breast Carcinoma.** James S. Tomlinson, Mary L. Alpaugh, and Sanford H. Barsky.

- 5342 **Entry Routes of Malignant Lymphoma into the Brain and Eyes in a Mouse Model.** Jacob Hochman, Nirai Assaf, Martina Deckert-Schlüter, Omar D. Wiedler, and Jacob Pe'er.

- 5348 **Influence of  $\beta$ 1 Integrins on Epidermal Squamous Cell Carcinoma Formation in a Transgenic Mouse Model:  $\alpha$ 3 $\beta$ 1, but not  $\alpha$ 2 $\beta$ 1, Suppresses Malignant Conversion.** David M. Owens and Fiona M. Watt.

- 5255 **Reduced Blood Vessel Formation and Tumor Growth in  $\alpha$ 5-Integrin-negative Teratocarcinoma and Embryoid Bodies.** Daniela Taverna and Richard O. Hynes.

- 5262 **Carbonic Anhydrase IX, an Endogenous Hypoxia Marker, Expression in Head and Neck Squamous Cell Carcinoma and Its Relationship to Hypoxia, Necrosis, and Microvessel Density.** Nigel J. P. Beasley, Charles C. Wykoff, Peter H. Watson, Russell Leek, Helen Turley, Kevin Gatter, Jaromir Pastork, Graham J. Cox, Peter Ratcliffe, and Adrian L. Harris.

- 5268 **Clonal Variation in the B-Lineage Acute Lymphoblastic Leukemia Response to Multiple Cytokines and Bone Marrow Stromal Cells.** Nisha Shah, LeAnn Oseih, Hien Tran, Betsy Hirsch, and Tucker W. Leiben.

- 5275 **A CD44 Survival Pathway Triggers Chemoresistance via Lyn Kinase and Phosphoinositide 3-Kinase/Akt in Colon Carcinoma Cells.** Richard C. Bates, Nathaniel S. Edwards, Gordon F. Burns, and David E. Fisher.

- 5284 **Overexpression of *KAI1* Suppresses *In Vivo* Invasiveness and *In Vivo* Metastasis in Breast Cancer Cells.** Xiaohong Yang, Lisa L. Wei, Caren Tang, Rebecca Slack, Suetete Mueller, and Marc E. Lippman.

- 5289 **Role of Iron in Tumor Cell Protection from the Pro-Apoptotic Effect of Nitric Oxide.** Frédéric Feger, Hélène Ferry-Dumazet, Maria Mamani Matsuda, Joëlle Bordenave, Maryse Dupuy, Andreas K. Nussler, Michel Anck, Lionel Devevey, Joëlle Nafziger, Jean-Jacques Guillon, Josy Reiffers, and M. Djavad Mossalayi.

- 5295 **A Rare Premalignant Prostate Tumor Epithelial Cell Syndecan-1 Forms a Fibroblast Growth Factor-binding Complex with Progression-promoting Ectopic Fibroblast Growth Factor Receptor 1.** Xiaochong Wu, Mikio Kan, Fen Wang, Chengliu Jin, Chundong Yu, and Wallace L. McKeehan.

- 5303 **Promoter Hypermethylation: A Common Cause of Reduced *p16INK4a* Expression in Urine Melanoma.** Peter A. van der Velde, Jessica A. W. Metzelaar-Blok, Wilma Bergman, H. Monique H. Harks, Rune R. Frants, Niekke A. Gruis, and Martine J. Jager.

- 5307 **Mutational Analysis of the Peroxisome Proliferator-activated Receptor  $\gamma$  Gene in Human Malignancies.** Kazuyuki Ito, Carl W. Miller, Seiji Kawano, Anthony Heaney, Elizabeth A. Williamson, Junichi Hisatsake, Eric Green, Wolf Hoffmann, Hirokuni Taguchi, and H. Philip Koefler.

- 5311 **The C-terminal Domain of FL-1 Is Necessary for Full Tumorigenesis and Transcriptional Modulation by EWS/FLI-1.** Afshane Arvand, Scott M. Welford, Michael A. Teitel, and Christopher T. Denny.

- 5318 **Effect of Changing Tumor Oxygenation on Glycolytic Metabolism in a Murine C3H Mammary Carcinoma Assayed by *in Vivo* Nuclear Magnetic Resonance Spectroscopy.** Flemming U. Nielsen, Peren Daugard, Lise Benzen, Hans Stokkide-Jørgensen, Jens Overgaard, Michael R. Horsman, and Ross J. Maxwell.

## 5326 Announcements

Future Annual Meetings of the American Association for Cancer Research  
Workshop on Pathobiology of Cancer  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Recent Death  
Calendar of Events

## 5328 Author Index

## Clinical Investigations

- 5402 **Functional Quantification of DNA-binding Proteins p53 and Estrogen Receptor in Cells and Tumor Tissues by DNA Affinity Immunoblotting.** Yanggang Liu, Harold Asch, and Molly F. Kalesz-Martin.

- 5407 **High Tumor Levels of Vascular Endothelial Growth Factor Predict Poor Response to Systemic Therapy in Advanced Breast Cancer.** John A. Folkens, Harry A. Peters, Nicola Grubisichukov, Maxime P. Lusk, Marion E. Meijer-van Gelder, Anneke Geurts-Moespot, Theo H. van der Kwast, C. G. J. (Fred) Sweep, and Jan G. M. Klijn.

## Epidemiology and Prevention

- 5415 **Red Meat, Family History, and Increased Risk of Gastric Cancer with Microsatellite Instability.** Domenico Palli, Antonio Russo, Laura Ottini, Giovanna Masala, Calogero Savaia, Andrea Amatori, Alessandro Cama, Cristina D'Amico, Mario Falchetti, Raffaele Palmirotta, Adriano Decarli, Renato Mariani Costantini, and Joseph F. Fraumeni, Jr.

## Experimental Therapeutics

- 5425 **Inhibition of DNA Replication by Tirapazamine.** Katherine B. Peters, Hongyan Wang, J. Martin Brown, and George Iliakis.

- 5432 **Tumor Growth Inhibition by Arsenic Trioxide (As<sub>2</sub>O<sub>3</sub>) in the Orthotopic Metastasis Model of Androgen-independent Prostate Cancer.** Hiroshi Maeda, Seiji Hori, Hideki Nishimoto, Hidenori Ichijo, Osamu Ogawa, Yoshiyuki Kakehi, and Akira Kakizuka.

- 5441 Effects of Angiotensin Gene Transfer on Functional Properties and *in Vivo* Growth of Kaposi's Sarcoma Cells. Stefano Indraccolo, Monica Morini, Eleonora Gola, Fabio Carozzino, Walter Haberer, Simona Minghelli, Leonardo Santi, Luigi Chiochio-Bianchi, Yihai Cao, Adriana Albini, and Douglas M. Noon.

- 5447 Multinodality Therapy with a Replication-conditional Herpes Simplex Virus 1 Mutant that Expresses Yeast Cytosine Deaminase for Intratumoral Conversion of 5-Fluorouracil to 5-Fluorodeoxythymine. Hideo Nakamura, John T. Mullen, Soudarshana ChandraSekhar, Timothy M. Pawlik, Sam S. Yoon, and Kenneth K. Tanabe.

- 5453 CV706, a Prostate Cancer-specific Adenovirus Variant, in Combination with Radiotherapy Produces Synergistic Antitumor Efficacy without Increasing Toxicity. Yu Chen, Theodore DeWeese, Jeanette Dilley, Yiwei Zhang, Yaoshun Li, Nagarajan Ramach, Luke Lee, Rukmini Pennathur-Das, John Radzysinski, Joseph Wypych, Dominic Brignetti, Sara Scott, Jennifer Stephens, David B. Karpi, Daniel R. Henderson, and De-Chao Yu.

- 5461 Resistance to Mitoxantrone in Multidrug-resistant MCF7 Breast Cancer Cells: Evaluation of Mitoxantrone Transport and the Role of Multidrug Resistance Protein Family Proteins. Sri K. Dik, Pamela K. Southerman, Jerry Aldridge, Erin L. Volk, Erasmus Schneider, Alan J. Townsend, and Charles S. Morrow.

- 5468 Inhibition of Promyelocytic Leukemia (PML)/Retinoic Acid Receptor- $\alpha$  and PML Expression in Acute Promyelocytic Leukemia Cells by Anti-PML Peptide Nucleic Acid. Luca Molteni, Edoardo Marchetti, Peter E. Nielsen, and Carlo Gambacorti-Passerini.

- 5474 8-Chloro-cAMP and 8-Chloro-adenosine Act by the Same Mechanism in Multiple Myeloma Cells. Vianchi Gandhi, Mary Ayres, Robert G. Halgren, Nancy L. Krett, Robert A. Newman, and Steve T. Rosen.

- 5480 A-204197, a New Tubulin-binding Agent with Antimitotic Activity in Tumor Cell Lines Resistant to Known Microtubule Inhibitors. Stephen K. Tahir, Edward K.-H. Han, Shi-Che, Hwan-Soo, Jay Jennifer A. Petropoulos, Caroline D. Scatena, Jinsun R. Wu-Wang, David Frost, Hing Sham, Saul H. Rosenberg, and Shi-Chung Ng.

- 5486 Triterpenoid Saponins from *Acacia victoriae* (Benth.) Decrease Tumor Cell Proliferation and Induce Apoptosis. Kijana Mojum, Valeria Haridas, Joseph J. Hoffmann, Gerald A. Hoffman, Louis K. Hutter, Yiling Lu, Mary E. Blake, Gamin S. Jayatilake, David Bailey, Gordon B. Mills, and Jordan U. Guterman.

- 5491 Pharmacodynamic-mediated Reduction of Temozolomide Tumor Concentrations by the Angiogenesis Inhibitor TNP-478. Jiaqiao Ma, Sharon Puffer, Shaolin Li, Jianxiong Chou, Karin Reed, and James M. Gallo.

- 5499 Tetra-O-methyl Nordihydroguaiaretic Acid Induces G2 Arrest in Mammary-Like Cells and Exhibits Tumoricidal Activity *in Vivo*. Jonathan D. Heller, Jennifer Kuo, T. C. Wu, W. Martin Kuo, and Ra-Chih C. Huang.

- 5505 Pharmacokinetic Dissection of Resistance to Thymidine Synthase Inhibitors. Weiguang Wang, Sharon Marsh, James Cassidy, and Howard L. McLeod.

## Immunology

- 5511 Identification of Fibroblast Growth Factor-5 as an Overexpressed Antigen in Multiple Human Adenocarcinomas. Ken-ichi Hanada, Donna M. Perry-Lalley, Galen A. Ohnmacht, Maria P. Bettinotti, and James C. Yang.

## Perspectives in Cancer Research

- 5683 Selective Estrogen Receptor Modulation: A Personal Perspective. V. Craig Jordan.

## Advances in Brief

- 5688 PTEN-independent Induction of Caspase-mediated Cell Death and Reduced Invasion by the Focal Adhesion Targeting Domain (FAT) in Human Astrocytic Brain Tumors Which Highly Express Focal Adhesion Kinase (FAK). Graham Jones, Joel Machado, Jr., Markus Tolnay, and Adrian Merlo.
- 5692 Expression Profiling Reveals Hsp90 Overexpression in Prostate Cancer. Jeffrey A. Magee, Toshiyuki Araki, Soham Paul, Tazden Elgar, Lawrence True, Peter A. Humphrey, William J. Catalano, Mark A. Wilson, and Jeffrey Milbrandt.

- 5697 A SAGE (Serial Analysis of Gene Expression) View of Breast Tumor Progression. Dale A. Potter, Ian E. Krop, Selim Nasser, Dennis Sgro, Carolyn M. Kaelin, Jeffrey R. Marks, Gregory Riggins, and Kornelia Polyak.

- 5703 Overexpression of Id-1 Protein Is a Marker for Unfavorable Prognosis in Early-Stage Cervical Cancer. Minika Schmitt, Georg Oberhuber, Andreas Obermair, Sebastian F. Schoppmann, Barbara Karner, and Peter Birner.

- 5707 Dioxin Suppresses the Checkpoint Protein, MAD2, by an Aryl Hydrocarbon Receptor-independent Pathway. Kosuke Okawa, Tetsuya Ohbayashi, Junpei Mimura, Ryoko Iwata, Akemi Kameta, Kazumi Ewino, Keiichi Iwaya, Yoshiaki Fuji-Kuriyama, Masahiko Kuroda, and Kiyoshi Mukai.

- 5710 Modest Increased Sensitivity to Radiation Oncogenesis in *ATM* Heterozygous versus Wild-Type Mammalian Cells. Lubomir B. Smilnov, David J. Brenner, and Eric J. Hall.

- 5714 Hepatoma-derived Growth Factor Is Associated with Reduced Sensitivity to Irradiation in Esophageal Cancer. Soham Paul, Minika Schmitt, Kenji Shibata, Yoshiaki Tanaka, Graham F. Berrard, Keizo Sugimachi, and Masaki Mori.

- 5718 *p53*, *CH22*, and *CHK1* Genes in Finnish Families with Li-Fraumeni Syndrome: Further Evidence of *CH22* in Inherited Cancer Predisposition. Pia Vahteristo, Antti Tammelin, Petteri Karvinen, Hanneleena Eerola, Carita Elund, Lauri A. Aaltonen, Carl Blomqvist, Kristina Aittomäki, and Heli Nevalainen.

- 5723 Prognostic Significance of Circulating Microsatellite Markers in the Plasma of Melanoma Patients. Bret Taback, Yoshiaki Fujiwara, He-Jing Wang, Leland J. Foshag, Donald L. Morton, and Dave S. B. Hoon.

- 5727 Aberrant Methylation and Simian Virus 40 Tag Sequences in Malignant Mesothelioma. Shinichi Toyokawa, Harvey C. Park, Narayan Shivapour, Yasuo Fukuyama, Riechiro Maruyama, Kiyomi O. Toyokawa, Michael Gilcrease, Alfredo Farias, John D. Minna, and Adi F. Gazdar.

- 5517 IgE Targeted on Tumor Cells: Therapeutic Activity and Potential in the Design of Tumor Vaccines. Eva Reath, John W. Greiner, Angelo Corti, Hannah J. Gould, Federica Bottazzoli, Giovanni Paganelli, Jeffrey Schlom, and Antonio G. Siccardi.

- 5523 Antimetastatic Effect of CpG DNA Mediated by Type 1 IFN. Michael Hafner, Rainer Zawatzky, Christian Hörterer, Wim A. Buurman, Bernd Echtenacher, Thomas Hehlhans, and Daniela N. Mäkelä.

## Molecular Biology and Genetics

- 5529 Human Telomerase Reverse Transcriptase Promoter Regulation in Normal and Malignant Human Ovarian Epithelial Cells. Ilana Braunstein, Ori Cohen-Barak, Catherine Shachaf, Yael Raveh, Michal Yalon-Hacohen, Gordon B. Mills, Maty Tsukerman, and Karl L. Skorecki.

- 5537 Redox Modulation of the Pro-Fibrogenic Mediator Plasminogen Activator Inhibitor-1 following Ionizing Radiation. Weiling Zhao, Douglas R. Spitz, Larry W. Oberley, and Mike E. C. Robbins.

- 5544 An Overview of the *MAGE* Gene Family with the Identification of All Human Members of the Family. Patrick Chomez, Olivier De Backer, Mathieu Bertrand, Etienne De Platen, Thierry Boun, and Sophie Lucas.

- 5552 Heterozygosity for the Mouse *Apur* Gene Results in Phenotypes Associated with Oxidative Stress. Lisiane B. Meira, Sridevi Devaraj, Glen E. Kirby, Dennis K. Burns, Russell L. Daniel, Robert E. Hammer, Scott Grundy, Ishwarlal Jialal, and Errol C. Friedberg.

- 5558 Hypermethylation Leads to Silencing of the *STK* Gene in Human Breast Cancer. Yufei Yuan, Richard Mendez, Aysegül Sahin, and Jia Le Dai.

## Tumor Biology

- 5562 Glypican-1 Is Overexpressed in Human Breast Cancer and Modulates the Mitogenic Effects of Multiple Heparin-binding Growth Factors in Breast Cancer Cells. Kei Matsuda, Haruhisa Yamagata, Fang Guo, Jörg Kleeff, Jun Itakura, Yoshiro Matsumoto, Alen D. Lander, and Murray Korn.

- 5570 Detection of Peritoneal Micrometastases of Gastric Carcinoma with Green Fluorescent Protein and Carcinoembryonic Antigen Promoter. Katsuhiko Kaneko, Masahiko Yano, Tomoki Yamano, Toshimasa Tsujikawa, Hirofumi Miki, Yosuke Akiyama, Masaki Taniguchi, Yoshiyuki Fujiwara, Yoshitoki Doki, Masatoshi Inoue, Hiroshi Shiozaki, Yasuaki Kameda, and Momo Monden.

- 5575 A Primary Tumor Promotes Dormancy of Solitary Tumor Cells before Inhibiting Angiogenesis. Markus Guba, Grigore Cerințan, Gustav Aebli, Edward K. Gelscher, Karl-Walter Jauch, Matthias Anthuber, Werner Falk, and Markus Steinbauer.

- 5580 Telomerase Inhibition in *RenCa*, a Murine Tumor Cell Line with Short Telomeres, by Overexpression of a Dominant Negative *hTERT* Mutant. Reveals Fundamental Differences in Telomerase Regulation between Human and Murine Cells. Jana Sachsinger, Eva González-Suárez, Enrique Samper, Rüdiger Heischelp, Markus Müller, and Maria A. Blasco.

- 5587 Plasminogen Activator Inhibitor-1 Promotes Angiogenesis by Stimulating Endothelial Cell Migration toward Fibronectin. Chho Isogai, Walter E. Laug, Hiroyuki Shimada, Paul J. Declercq, Monique F. Stins, Donald L. Darden, Anat Endreich-Epstein, and Yves A. Declercq.

- 5595 High Glycolytic Activity in Rat Glioma Demonstrated *in Vivo* by Correlation Peak  $^1\text{H}$  Magnetic Resonance Imaging. Anne Ziegler, Markus von Kienlin, Michel Décorps, and Chantal Rémy.

## August 1, Number 15

- 5731 HIF-1 $\alpha$ -mediated Up-regulation of Vascular Endothelial Growth Factor, Independent of Basic Fibroblast Growth Factor, Is Important in the Switch to the Angiogenic Phenotype during Early Tumorigenesis. Justin Fang, Li Yan, Yuen Shing, and Marsha A. Moses.

- 5736 Vascular Endothelial Growth Factor Is an Autocrine Survival Factor for Neuroepithelial-derived Breast Carcinoma Cells. Robin E. Bachelder, Anne Crago, Jun Chung, Melissa A. Wendt, Leslie M. Shaw, Gregory Robinson, and Arthur M. Mercurio.

## Regular Articles

### Biochemistry and Biophysics

- 5741 A Monoclonal Antibody That Induces Neuronal Apoptosis Binds a Metastasis Marker. Li-tao Zhong, Adriana Manzi, Evgen Skovronski, Lucia Nutterpek, Arvan L. Fluharty, Kym F. Faull, Irene Masada, Shahrooz Rahzadeh, Maria Varasani-Nagy, Youlin Yuan, Justin D. Oh, Larry L. Butcher, and Dale E. Bredesen.

### Carcinogenesis

- 5749 Two Novel Glycosides from the Fruits of *Morinda citrifolia* (Noni) Inhibit AP-1 Transactivation and Cell Transformation in the Mouse Epithelial JB6 Cell Line. Guangming Liu, Ann Bode, Wei-Ya Ma, Shengmin Sung, Chi-Tang Ho, and Ziqiang Dong.

- 5757 Interactions between Methylating and Pyridylol-nitylating Agents in A/J Mouse Lungs: Implications for 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone-induced Lung Tumorigenesis. Lisa A. Peterson, Nicole M. Thomson, Duane L. Crankshaw, Elizabeth E. Donaldson, and Patrick J. Kenney.

### Endocrinology

- 5764 Preferential Growth Stimulation of Mammary Glands over Uterine Endometrium in Female Rats by a Naturally Occurring Estradiol-17 $\beta$ -Ting Acid Ester. Laura H. Mills, Anthony J. Lee, A. F. Parlow, and Bao Ting Zhu.

- 5771 Re-expression of Estrogen Receptor  $\alpha$  in Estrogen Receptor  $\alpha$ -negative MCF-7 Cells Restores both Estrogen and Insulin-like Growth Factor-mediated Signaling and Growth. Shihai Osterreich, Ping Zhang, Rebecca L. Galer, Xuhua Sun, Edward M. Curran, Wade V. Welshons, C. Kent Osborne, and Adrian V. Lee.

### Experimental Therapeutics

- 5778 Growth Inhibition of Dermatofibrosarcoma Protuberans Tumors by the Platelet-derived Growth Factor Receptor Antagonist ST1571 through Induction of Apoptosis. Tobias Sjöblom, Akira Shimizu, Kevin P. O'Brien, Kristian Pietras, Paola Dal Cio, Elisabeth Buchdunger, Jan P. Dumanski, Arne Östman, and Carl-Henrik Heldin.

- 5601 Overexpression of  $\alpha 4$  Chain-containing Laminins in Human Glioma Tumors Identified by Gene Microarray Analysis. Julia Y. Ljubimova, Alexander J. Lakhter, Anna Laks, William H. Yong, Mary S. Riedinger, Jeffrey H. Miner, Lydia M. Sorokin, Alexander V. Ljubimov, and Keith L. Black.

- 5611 Androgen Blocks Apoptosis of Hormone-dependent Prostate Cancer Cells. Kotobiko Kimura, Mark Markowski, Cai Bowen, and Edward P. Gelman.

- 5619 Metastasis-inducing DNA Regulates the Expression of the Osteopontin Gene by Binding the Transcription Factor Tcf-4. Mohamed El-Tamir, Roger Barracough, Mark C. Wilkinson, and Philip S. Radford.

- 5630 Absence of Crabtree Effect in Human Melanoma Cells Adapted to Growth at Low pH: Reversal by Respiratory Inhibitors. Randy Bask, Phyllis R. Wachsberger, John E. Blaglow, Miriam L. Wahl, Intae Lee, and Dennis B. Leeper.

- 5636 Alterations of *p14<sup>ARF</sup>*, *p53*, and *p73* Genes Involved in the E2F-1-mediated Apoptotic Pathways in Non-Small Cell Lung Carcinoma. Siobhan A. Nicholson, Nader T. Okby, Mohammed A. Khan, Judith A. Welsh, Mary G. McMenamin, William D. Travis, James R. Jett, Henry D. Tazelaar, Victor Trask, Peter C. Partridge, Paul G. Corn, James G. Herman, Lance A. Liotta, Neil E. Caporaso, and Curtis C. Harris.

- 5644 The Src-suppressed C Kinase Substrate, SSeCKS, Is a Potential Metastasis Inhibitor in Prostate Cancer. Wei Xia, Pan Unger, Lorraine Miller, Joel Nelson, and Irwin H. Gelman.

- 5652 Prostate Cancer Cells Induce Osteoblast Differentiation through a *Chfai*-dependent Pathway. Jun Yang, Karim Fuzazi, Sara Peleg, Charles R. Sikes, A. Kevin Raymond, Nauseen Jamal, Min Ha, Matilde Olive, Luis A. Martinez, Christopher G. Wood, Christopher J. Logothetis, Gerard Karantay, and Nora M. Navone.

## Letters to the Editor

- 5660 Correspondence re: B. H. Joshi *et al.*, Interleukin-13 Receptor  $\alpha$  Chain: A Novel Tumor-associated Transmembrane Protein in Primary Explants of Human Malignant Gliomas. Cancer Res. 60: 1168-1172, 2000. Waldemar Debinski.

- 5661 Reply. Bharat H. Joshi, Gregory E. Platatz, and Raj K. Pati.

## Obituary

- 5663 In Memoriam: Leonard L. Weiss, Sc.D., M.D., Ph.D. Dorothy Glaves Rapp.

## 5664 Announcements

- Future Annual Meetings of the American Association for Cancer Research  
Workshop on Methods in Clinical Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## 5666 Employment Register

## 5681 Author Index

- 5784 Inhibition of Glioma Growth *in Vivo* by Selective Activation of the CB2 Cannabinoid Receptor. Cristina Sánchez, María L. de Coballes, Teresa Gómez del Pulgar, Daniel Rueda, César Corbacho, Guillermo Velasco, Ismael Galve-Roperch, John W. Huffman, Santiago Ramón y Cajal, and Manuel Guzmán.

- 5790 Signaling-inactive Epidermal Growth Factor Receptor/Ligand Complexes in Intact Carcinoma Cells by Quinoxaline Tyrosine Kinase Inhibitors. Rosemarie B. Lichtner, Andreas Meriad, Anette Sommer, Ulrich Klar, and Martin R. Schneider.

- 5796 Treatment of Malignant Glioma Cells with the Transfer of Constitutively Active Caspase-6 Using the Human Telomerase Catalytic Subunit (Human Telomerase Reverse Transcriptase) Gene Promoter. Tadashi Komata, Yasuko Kondo, Takao Kanawara, Satoshi Hirohata, Shoji Koga, Hidetoshi Yumoto, Srinivasa M. Srinivasula, Barbara P. Barna, Isabelle M. Germano, Masahiro Takakura, Masaki Inoue, Emad S. Alnemri, Jerry W. Shay, Satoru Kyo, and Seiji Kondo.

- 5803 Multiple Microtubule Alterations Are Associated with Vinca Alkaloid Resistance in Human Leukemia Cells. Maria Kavaliaris, A. Sashi Tait, Bradley J. Walsh, Lifeng He, Susan B. Horwitz, Murray D. Norris, and Michelle Haber.

- 5810 Differing Contribution of Thiopurine Methyltransferase to Mercaptopurine versus Thioguanine Effects in Human Leukemic Cells. Thierry Devreux, Javier G. Blanco, Eugene Y. Krynetski, Elio F. Vanin, Martin F. Roussel, and Mary V. Relling.

- 5817 Helminth Triggers a CD95 Death Receptor-independent Apoptosis That Is Not Affected by Overexpression of Bcl-x<sub>L</sub> or Bcl-2. Virena M. Dirsch, Hermann Stoppner, and Angelika M. Vollmar.

- 5824 Antitumor Effect of 5-Aminolevulinic Acid-mediated Photodynamic Therapy Can Be Enhanced by the Use of a Low Dose of Photofrin in Human Tumor Xenografts. Qun Peng, Trond Warloe, Johan Moen, Aslak Godal, Fabio Apricena, Karl-Erik Gierczyk, and John M. Neiland.

- 5833 Chimeric Tumor Suppressor 1, a p53-derived Chimeric Tumor Suppressor Gene, Kills p53 Mutant and p53 Wild-type Glioma Cells in Synergy with Irradiation and CD95 Ligand. Ulrike Naumann, Sebastian Kilger, Hartwig Wolburg, Wolfgang Wick, Gesa Rascher, Jörg B. Schulz, Emmanuel Conceller, Mathias Bähr, and Michael Weller.

- 5843 Abrogation of the Chk1-mediated G2 Checkpoint Pathway Potentiates Telomerase-induced Toxicity in a p53-independent Manner in Human Glioblastoma Cells. Yuichi Hirose, Michel S. Berger, and Russell O. Pieper.

## Immunology

- 5850 Heterogeneous T-Cell Response to MAGE-A10<sub>254-262</sub>: High Avidity-specific Cytolytic T Lymphocytes Show Superior Antitumor Activity. Valérie Dutoit, Verena Rubio-Godoy, Pierre-Yves Dietrich, Anne-Lise Quinquiers, Valérie Schurhammer, Donata Mirand, Danielle Liérand, Daniel Speiser, Philippe Guillaume, Pascal Batard, Jean-Charles Cerottini, Pedro Romero, and Daniela Valmorì.
- 5857 Murine Six-Transmembrane Epithelial Antigen of the Prostate, Prostate Stem Cell Antigen, and Prostate-specific Membrane Antigen: Prostate-specific Cell-Surface Antigens Highly Expressed in Prostate Cancer of Transgenic Adenocarcinoma Mouse Prostate. Dama Yang, Gregory E. Holt, Markwin P. Velders, Eugene D. Kwon, and W. Martin Kast.

## Molecular Biology and Genetics

- 5861 Osteopontin Is an Autocrine Mediator of Hepatocyte Growth Factor-induced Invasive Growth. Enzo Medico, Alessandra Gentile, Cristina Lo Celso, Tracy A. Williams, Giovanna Gambaretta, Livio Trusolino, and Paolo M. Comoglio.
- 5869 Short Polyglutamine Tracts in the Androgen Receptor Are Protective against Breast Cancer in the General Population. Yves Giguère, Eric Desjardins, Jacques Brisson, Pierre Ayotte, Nathalie Lafamme, Alain Demers, Véronique-Isabelle Forest, Jean Robert, and François Rousseau.
- 5875 Global and Gene-specific Epigenetic Patterns in Human Bladder Cancer Genomes Are Relatively Stable *in Vivo* and *in Vitro* over Time. Isabel D.C. Markl, Jonathan Cheng, Gangning Liang, Darryl Shibata, Peter W. Laird, and Peter A. Jones.
- 5885 Regulation of the Catalase Gene Promoter by Sp1, CCAAT-recognizing Factors, and a WT1/Egr-related Factor in Hydrogen Peroxide-resistant HP100 Cells. Mitsuru Neno, Sachiko Ichimura, Kazuo Mita, Osami Yukawa, and Iain L. Cartwright.

## Advances in Brief

- 5959 p14<sup>ARF</sup> Modulates the Cytolytic Effect of ONYX-015 in Mesothelioma Cells with Wild-type p53. Cheng-Ta Yang, Liang Wu, Kazunaga Uematsu, Che-Chung Yeh, Frank McCormick, and David W. Jablons.
- 5964 Spontaneous Cytotoxic T-Cell Responses against Survivin-derived MHC Class I-restricted T-Cell Epitopes *in Situ* As Well As *ex Vivo* in Cancer Patients. Mads Hald Andersen, Lars Ø. Pedersen, Barbara Capeller, Eva-Bettina Bröcker, Jürgen C. Becker, and Per Thor Straten.
- 5969 A Novel Human Cell Culture Model for the Study of Familial Prostate Cancer. Yutaka Yasunaga, Keiichiro Nakamura, Charles M. Ewing, William B. Isaacs, Bharat Hakkio, and John S. Rhim.
- 5974 Analysis of Gene Expression Identifies Candidate Markers and Pharmacological Targets in Prostate Cancer. John B. Welsh, Lisa M. Sagnone, Andrew I. Su, Suzanne G. Kern, Jessica Wang-Rodriguez, Christopher A. Moskaluk, Henry F. Frierson, Jr., and Garrett M. Hampton.
- 5979 Estrogen Receptor Status in Breast Cancer Is Associated with Remarkably Distinct Gene Expression Patterns. Sofia Gruberger, Markus Ringler, Yidong Chen, Sujatha Panavally, Liao H. Sui, Ake Borg, Martin Ferner, Carsten Petersen, and Paul S. Meltzer.
- 5985 Phosphatidylinositol-3-OH Kinase (PI3K/AKT), Activated in Breast Cancer, Regulates and Is Induced by Estrogen Receptor  $\alpha$  (ER $\alpha$ ) via Interaction between ER $\alpha$  and PI3K. Mei Sun, June E. Paciga, Richard I. Feldman, Zeng-qiang Yuan, Domenico Coppola, Yoo Yong Lu, Sue A. Shelley, Santo V. Nicotri, and Jin Q. Cheng.
- 5992 The EWS Protein Is Dispensable for Ewing Tumor Growth. Heinrich Kovar, Günthard Jug, Claudia Hattinger, Laura Spahn, Dave N. T. Aryee, Peter F. Ambros, Andreas Zoubek, and Helmut Gader.
- 5998 High Incidence of Somatic Mitochondrial DNA Mutations in Human Ovarian Carcinomas. Vincent W. S. Liu, Hong Hui Shi, Annie N. Y. Cheng, Pui Man Chin, Tsin Wah Leung, Philip Nagley, Ling Chai Wong, and Heston Y. S. Ngan.
- 6002 Cell Growth Inhibition by the Multifunctional Multivalent Zinc-Finger Factor CTCF. John E. J. Rasko, Elena M. Klenova, Javier Leon, Galina N. Filippova, Dmitri I. Loukounov, Sergei Votolov, Abigail F. Robinson, Ying Jia Hu, Jonathan Ulmer, Michael D. Ward, Elena M. Pugacheva, Paul E. Neiman, Herbert C. Morse, III, Steven J. Collins, and Victor V. Lobanov.
- 6008 The Transcriptional Repressor of p16<sup>Ink4a</sup>, Id1, Is Up-Regulated in Early Melanomas. David Polsky, Alison Zuying Young, Klaus J. Busam, and Rhoda M. Alani.
- 6012 A Conditional Replication-competent Adenoviral Vector, Ad-OC-E1a, to Cotarget Prostate Cancer and Bone Stroma in an Experimental Model of Androgen-independent Prostate Cancer Bone Metastasis. Shigeki Matsubara, Yoshitaka Wada, Thomas A. Gardner, Masayuki Egawa, Moon-Soo Park, Chiu-Ling Hsieh, Hayden E. Zhou, Qinghai Gao, Sadao Kamidono, Jay Y. Gillemeier, and Leland W. K. Chung.
- 6020 Hypoxia and Acidosis Independently Up-Regulate Vascular Endothelial Growth Factor Transcription in Brain Tumors *in Vivo*. Dai Fukumura, Lei Xu, Yi Chen, Takeshi Gohongi, Brian Seel, and Rakesh K. Jain.
- 6025 Age-related Radical-induced DNA Damage Is Linked to Prostate Cancer. Donald C. Malins, Paul M. Johnson, Thomas M. Wheeler, Edward A. Barker, Nayak L. Polissar, and Mark A. Vinson.
- 6029 Quantitation of Serum Prostate-specific Membrane Antigen by a Novel Protein Bioschip Immunoassay Discriminates Benign from Malignant Prostate Disease. Zhen Xiao, Bao-Ling Adam, Lisa H. Cazares, Mary Ann Clements, John W. Davis, Paul F. Schellhammer, Enrique A. Dalmasso, and George L. Wright, Jr.

- 5895 Genetic Analysis of Early- versus Late-stage Ovarian Tumors. Viji Shridhar, John Lee, Ajay Pandita, Steve Iltis, Rajewski Avula, Julie Staub, Mike Morrissey, Eric Calhoun, Ami Sen, Kimberly Kalli, Gary Kerney, Patrick Roche, William Cliby, Karen Lu, Rosemarie Schmandt, Gordon B. Mills, Robert C. Bast, Jr., C. David James, Fergus J. Couch, Lynn C. Hartmann, Jim Lillie, and David I. Smith.

## Tumor Biology

- 5905 Tumor Suppressor Genes in the 9p21 Gene Cluster Are Selective Targets of Inactivation in Neuroendocrine Gastroenteropancreatic Tumors. Nikolaus Lubomierski, Michael Kersting, Tilmann Bert, Karin Muench, Ulrich Walbrund, Marcus Schuermann, Deter Bartsch, and Babette Simon.
- 5911 Hepatocyte Growth Factor/Scatter Factor-induced Activation of MEK and PI3K Signal Pathways Contributes to Expression of Proliferogenic Cytokines Interleukin-8 and Vascular Endothelial Growth Factor in Head and Neck Squamous Cell Carcinomas. Gang Dong, Zhong Chen, Zhi-Yu Li, Ning T. Yeh, Caren C. Bancroft, and Carter Van Wae.
- 5919 Abrogation of Transforming Growth Factor- $\alpha$ /Epidermal Growth Factor Receptor Autocrine Signaling by an RXR-selective Retinoid (LGD1069, Thapsigargin) in Head and Neck Cancer Cell Lines. John I. Song, Miriam N. Lango, James D. Hwang, Stephanie D. Drenning, Qing Zeng, William W. Lamph, and Jennifer Rubin Grands.
- 5926 Ubiquitin/26S Proteasome-mediated Degradation of Topoisomerase I As a Resistance Mechanism to Camptothecin in Tumor Cells. Shymal D. Desai, Tsai-Kun Li, Alexandru Rodriguez-Bauman, Eric H. Rubin, and Leroy F. Liu.
- 5933 Signaling from Protease-activated Receptor-1 Inhibits Migration and Invasion of Breast Cancer Cells. Lakshmi Kumath, Abou Meydani, Francine Foss, and Athan Kallipoulos.

## Virology

- 5941 Efficient Replication of Adenovirus Despite the Overexpression of Active and Nondegradable p53. Philipp Kich, Jennifer Garfield, Christian Löber, Urs Hobom, Claudia Lenz-Stöckel, Judith Roth, and Matthias Döbelstein.

## August 15, Number 16

- 6034 A Novel 7-modified Camptothecin Analog Overcomes Breast Cancer Resistance Protein-associated Resistance in a Mitoxantrone-selected Color Carcinoma Cell Line. Paola Perigo, Michelandrea De Cesare, Paola De Isabella, Nives Carenini, Gino Beggiolin, Gabriella Pezzoni, Manlio Palumbo, Loris Tartaglia, Graziella Pratesi, Claudio Pisano, Paolo Carminati, George L. Scheffer, and Franco Zanini.
- 6038 ELAC2/HPIC2 Involvement in Hereditary and Sporadic Prostate Cancer. Annika Rönkä, Tarja Ikonen, Nina Mononen, Ville Autio, Mika P. Mäkitäinen, Pasi A. Koivisto, Teuvo L. J. Tammela, Olli-P. Kallioniemi, and Johanna Schleutner.
- 6042 CYCLIN D1 as a Genetic Modifier in Hereditary Nonpolyposis Colorectal Cancer. Shashi Bala and Päivi Peltomäki.
- 6046 Instabilitytyping: Comprehensive Identification of Frameshift Mutations Caused by Coding Region Microsatellite Instability. Yuriko Mori, Jing Yin, Asma Rashid, Barbara A. Leggett, Joanne Young, Lisa Simms, Peter M. Kuchel, Patricia Langenberg, Stephen J. Meltzer, and O. Colin Sime.
- 6050 Regulation of Vascular Endothelial Growth Factor by the Wnt and K-ras Pathways in Colonic Neoplasia. Xiaobo Zhang, John P. Gaspard, and Daniel C. Chung.
- 6055 The Expression of Inducible cAMP Early Repressor (ICER) Is Altered in Prostate Cancer Cells and Reverses the Transformed Phenotype of the LNCaP Prostate Tumor Cell Line. Ghassan Yehia, Reza Razavi, Elisabeth Memm, Florence Schlöter, and Carlos A. Molina.

## Regular Articles

## Carcinogenesis

- 6060 Phosphorylation of Mitogen-activated Protein Kinase Is Inhibited by Calcitonin in DU145 Prostate Cancer Cells. Naoki Segawa, Misa Nakamura, Yasushi Nakamura, Ichiro Mori, Eiji Katsukawa, and Kenichi Kakudo.
- 6064 A Human Prostatic Epithelial Model of Hormonal Carcinogenesis. Yuehua Wang, Daniel Sadilovsky, Baohui Zhang, Peter C. Haughey, Mark A. Rosen, David S. Wu, Tristan J. Cunha, Rajiv Dahiya, Gerald R. Cunha, and Simon W. Hayward.
- 6073 Targeted Antisense Expression in the Skin of Transgenic Mice Reduces Tumor Promoter Induction of Ornithine Decarboxylase and Decreases Sensitivity to Chemical Carcinogenesis. David J. Feith, Lisa M. Shantz, and Anthony E. Pegg.
- 6082 Overexpression of Manganese Superoxide Dismutase Suppresses Tumor Formation by Modulation of Activator Protein-1 Signaling in a Multistage Skin Carcinogenesis Model. Yunfeng Zhao, Yi Xue, Terry D. Oberley, Kelley K. Kittingham, Shu-Mei Lin, Hsiu-Chuan Yen, Hideyuki Majima, Judy Hines, and Daret S. Clair.

## Endocrinology

- 6089 Estrogen Imprinting of the Developing Prostate Gland Is Mediated through Stromal Estrogen Receptor  $\alpha$ : Studies with  $\alpha$ ERKO and  $\beta$ ERKO Mice. Gall S. Prins, Lynn Birch, John F. Cooney, Inho Choi, Benita Katzenellenbogen, and Kenneth S. Korach.
- 6098 A Molecular Clinic of Phosphorylated Prolactin Markedly Reduced Tumor Incidence and Size When DU145 Human Prostate Cancer Cells Were Grown in Nude Mice. Xiaoli Xu, Eva Krejci, C. Benson Kao, and Ameeta M. Walker.
- 6105 Overexpression and Overactivation of Akt in Thyroid Carcinoma. Matthew D. Ringel, Nicole Hayre, Jun Saito, Bertrand Sumier, Frank Schuppert, Henry Baruch, Victor Benet, Kenneth D. Burman, Leonard D. Kohn, and Motoyasu Saji.

## Epidemiology and Prevention

- 6112 Chemoprevention of Esophageal Tumorigenesis by Dietary Administration of Lycopodium-activated Retinoids. Laura A. Kestry, Mark A. Morse, Charlotte Morgan, Peter S. Carlton, Jerry Lu, Ashok Gupta, Michelle Blackwood, and Gary D. Stoner.

## Letters to the Editor

- 5948 Correspondence re: A. Rothfuss *et al.*, Induced micronucleus frequencies in peripheral blood lymphocytes as a screening test for carriers of a BRCA1 mutation in breast cancer families. Cancer Res., 60: 390-394, 2000. Karin Bava, Colleen Warren, Stephen A. Roberts, Catharine M. L. West, D. Gareth R. Evans, Jenny M. Varley, David Scott.
- 5950 Correspondence re: P. P. Claudio *et al.*, Mutations in the Retinoblastoma-related Gene RB2/p130 in Primary Nasopharyngeal Carcinoma. Cancer Res., 60: 8-12, 2000. Steven G. Gray, Xiang Guo, Derek Kedra, Bin T. Teh, Xiang Guo, Hua-Qing Min.
- 5952 Reply. Pier Paolo Claudio, Caterina Cinti, Marco G. Paggi, Antonio Giordano.

## Special Recognition

- 5954 V. Craig Jordan, Ph.D., D.Sc., Receives Bristol-Myers Squibb Award.

## 5955 Announcements

Future Annual Meetings of the American Association for Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## 5956 Corrections

X. Huang *et al.*, Cancer Res., 61: 478-481, 2001.  
S.-H. Song *et al.*, Cancer Res., 61: 4628-4635, 2001.

## 5957 Author Index

- 6120 Dietary Indoles and Isothiocyanates That Are Generated from Cruciferous Vegetables Can Both Stimulate Apoptosis and Confer Protection against DNA Damage in Human Colon Cell Lines. Christine Bonnesen, Ian M. Eggleston, and John D. Hayes.
- 6131 Suppression of Intestinal Polyps in Msh2-deficient and Non-Msh2-deficient Multiple Intestinal Neoplasia Mice by a Specific Cyclooxygenase-2 Inhibitor and by a Dual Cyclooxygenase-1/2 Inhibitor. Geeta Lal, Colleen Ash, Kazy Hay, Mark Redston, Elizabeth Kwong, Bruno Hancock, Tak Mak, Stacia Kargman, Jilly F. Evans, and Steven Gallinger.

## Experimental Therapeutics

- 6137 Reversal of Cytostatic and Antiestrogenic Properties with Human Endometrial Adenocarcinoma (Ishikawa) Cells. Krishna P. L. Bhat and John M. Pezzuto.
- 6145 Nontoxic Doses of Suramin Enhance Activity of Paclitaxel against Lung Metastases. Sachin Song, M. Guillaume Wempey, Colin Walsh, and Jessie L.-S. Au.
- 6151 Growth-inhibitory Effect of a Streptococcal Antitumor Glycoprotein on Human Epidermoid Carcinoma A431 Cells: Involvement of Dephosphorylation of Epidermal Growth Factor Receptor. Junko Yoshida, Takaharu Ishibashi, and Matomo Nishio.
- 6158 Carcinomembryonic Antigen-specific Suicide Gene Therapy of Cytosine Deaminase/5-Fluorocytosine Enhanced by the Cre/loxP System in the Orthotopic Gastric Carcinoma Model. Kentaro Ueda, Makoto Iwahashi, Mikihito Nakamori, Masaki Nakamura, Ichiro Matsura, Hiroki Yamane, and Hiroshi Tamura.
- 6163 An Adenovirus Expressing Mutant p27 Showed More Potent Antitumor Effects Than Adenovirus-p27 Wild Type. Kyung-Ho Park, Ja Young Seol, Tae-You Kim, Chul-Gyu Yoo, Young Whan Kim, Sung Koo Han, Young-Soo Shin, and Choon-Tark Lee.
- 6170 A Novel cdk2-selective Inhibitor, SL9516, Induces Apoptosis in Colon Carcinoma Cells. Maureen E. Lane, Bo Yu, Audie Rios, Kenneth E. Lipson, Chris Liang, Li Sun, Cho Tang, Gerald McMahon, Richard G. Pestell, and Scott Wadler.
- 6178 Targeted Interleukin-2 Therapy Enhances Protective Immunity Induced by an Antitumor Oral DNA Vaccine against Murine Melanoma. Andrea G. Niehammer, Rong Xiang, J. Michael Ruchelmann, Holger N. Lode, Carrie S. Dolman, Stephen D. Gillies, and Ralph A. Reisfeld.
- 6185 Loss of p53 Function Confers High-Level Multidrug Resistance in Neuroblastoma Cell Lines. Nino Keshelava, Juan J. Zuo, Ping Chen, Sitara N. Wadysarane, Marian C. Luna, Charles J. Gomer, Timothy J. Triche, and C. Patrick Reynolds.
- 6194 Interleukin-13 Receptor-targeted Cancer Therapy in an Immunodeficient Animal Model of Human Head and Neck Cancer. Koji Kawakami, Mariko Kawakami, Bharat H. Joshi, and Raj K. Puri.
- 6201 Eradication of Intraperitoneal and Distant Tumor by Adenovirus-mediated Interferon- $\beta$  Gene Therapy Is Attributable to Induction of Systemic Immunity. Makoto Otsuka, Daniel H. Sterman, Rainer Wiesmuller, Yi Zhang, Michael Kiefer, Kunjilata M. Amin, Guan-Ping Guo, James M. Wilson, James Barsom, Larry R. Kaiser, and Steven M. Albelda.
- 6213 Anticancer Effects of Thiazolidinediones Are Independent of Peroxisome Proliferator-activated Receptor  $\gamma$  and Mediated by Inhibition of Translational Initiation. Sangeetha S. Palakurabi, Huseyin Aktas, Luciano M. Grubisich, Richard M. Mortensen, and José A. Halperin.



## Immunology

- 6219 Epstein-Barr Virus-specific Cytotoxic T Lymphocyte Responses in the Blood and Tumor Site of Hodgkin's Disease Patients: Implications for a T-cell-based Therapy. Ann L. N. Chapman, Alan B. Rickinson, Wendy A. Thomas, Ruth F. Jarrett, John Crocker, and Steven P. Lee.

## Molecular Biology and Genetics

- 6227 A Subclass of HER1 Ligands Is a Prognostic Marker for Survival in Bladder Cancer Patients. Vibeke Bech Thøgersen, Børge Sandahl Sørensen, Steen Seier Poulsen, Torben Falck Ørntoft, Hans Wolf, and Ebba Nexø.
- 6234 Tumor Susceptibility of *p27<sup>Waf1/Cip1</sup>*-deficient Mice. Juan Martín-Caballero, Juana M. Flores, Pilar García-Palencia, and Manuel Serrano.
- 6239 Reversion of Transcriptional Repression of Sp1 by 5-aza-2'-deoxycytidine Restores TGF- $\beta$  Type II Receptor Expression in the Pancreatic Cancer Cell Line MIA PaCa-2. Kolaparthi Venkatasubbarao, Sudhakar Ammanamanchi, Michael G. Brattain, Dumun Mimari, and James W. Freeman.

## Tumor Biology

- 6248 Expression of Angiopoietin-2 in Human Glioma Cells and Its Role for Angiogenesis. Kazumasa Koga, Tatemoto Tokuda, Motohiro Morikawa, Jun-ichiro Hamada, Yutaka Kai, Shigetsugu Yano, Akira Okamura, Nobuyuki Takakura, Toshio Suda, and Yukihiro Ushio.

## Perspectives in Cancer Research

- 6307 Lipoxigenase Modulation to Reverse Carcinogenesis. Imad Shureigi and Scott M. Lippman.

## Review

- 6313 Adeno-associated Virus for Cancer Therapy. Selvarangan Perumazhagan, David T. Curiel, Denise R. Shaw, Ronald D. Alvarez, and Gene P. Siegal.

## Advances in Brief

- 6322 Cooperative Interactions of Laminin 5  $\gamma$ 2 Chain, Matrix Metalloproteinase-2, and Membrane Type-1-Matrix/Metalloproteinase Are Required for Mimicry of Embryonic Vasculogenesis by Aggressive Melanoma. Richard E. B. Seftor, Elisabeth A. Seftor, Naohiko Koshikawa, Paul S. Meltzer, Lynn M. G. Gardner, Martin Bihhan, William G. Stetler-Stevenson, Yumi Quaranta, and Mary J. C. Hendrix.
- 6328 Enhanced Adenovirus Transgene Expression in Malignant Cells Treated with the Histone Deacetylase Inhibitor FK228. Masaki Kikazono, Merrill E. Goldsmith, Takashi Akino, Susan Bates, and Tito Fajó.
- 6331 Loss of Anexin II Heavy and Light Chains in Prostate Cancer and Its Precursors. Albert Chetcuti, Sienna H. Margan, Peter Russell, Stephen Mann, Douglas S. Millar, Susan J. Clark, John Rogers, David J. Handelsman, and Qihang Dong.
- 6335 Frequent Alterations of the *p16<sup>INK4a</sup>* and *p16<sup>ARF</sup>* Genes in Primary Central Nervous System Lymphoma. Mitsutoshi Nakamura, Toshioke Sakaki, Hiroyuki Hashimoto, Hiroyuki Nakase, Eiwa Ishida, Keiji Shimada, and Noboru Konishi.
- 6340 TSU-Pr1 and JCA-1 Cells Are Derivatives of T34 Bladder Carcinoma Cells and Are Not of Prostatic Origin. Adrie van Bokhoven, Mariëtte Varella-Garcia, Christopher Korch, and Gary J. Miller.
- 6345 Identification of *ATF7* As a Downstream Gene of the  $\beta$ -catenin/T-Cell Factor Pathway and Its Involvement in Colorectal Carcinogenesis. Yu-Min Lin, Kenji Ono, Seiji Sato, Hideyuki Ishiguro, Manabu Fujita, Nobutomo Miwa, Toshio Tanaka, Tetsuhiko Tsunoda, Kou-Ching Yang, Yusuke Nakamura, and Yoichi Furukawa.
- 6350 Mutability of p53 Hotspot Codons to Benzo(a)pyrene Diol Epoxide (BPDE) and the Frequency of p53 Mutations in Nontumorous Human Lung. S. Perwez Hussain, Paul Anstad, Kamran Raja, Mark Sawyer, Lorne Hofseth, Peter G. Shields, Alan Hewer, David H. Phillips, David Ryberg, Aage Haugen, and Curtis C. Harris.
- 6356 *Helicobacter pylori* Membrane Protein 1: A New Carcinogenic Factor of *Helicobacter pylori*. Masami Suganuma, Miki Kurosu, Sachiko Okabe, Naoko Sueoka, Masaru Yoshida, Yoshio Wakatsuki, and Hirota Fujiki.
- 6360 Estrogens Do Not Modify MAP Kinase-dependent Nuclear Signaling during Stimulation of Early G<sub>1</sub> Progression in Human Breast Cancer Cells. Silvana Carotti, Juan Leyva Galera, Filomena Matarese, Manami Imai, Simona Caporali, Massimo Canciani, Lucia Alimici, Luigi Scatellaro, Diana Teti, Francesco Bressanini, and Alessandro Weiss.

- 6367 Smoking Increases Carcinogenic Polycyclic Aromatic Hydrocarbons in Human Lung Tissue. Radosław Goldman, Lindsey Enright, Ade Pellizzari, James B. Beach, Elise D. Bowman, Shiva S. Krishnan, and Peter G. Shields.
- 6372 Therapeutic Implications of Enhanced G<sub>0</sub>/G<sub>1</sub> Checkpoint Control Induced by Coculture of Prostate Cancer Cells with Osteoblasts. Jack Pinski, Aist Parikh, G. Steven Bova, and John T. Isaacs.

- 6377 Targeting Oncolytic Adenoviral Agents to the Epidermal Growth Factor Pathway with a Secretory Fusion Molecule. Akshai Hemminki, Igor Dmitriev, Bin Liu, Renee A. Desmond, Ramon Alemany, and David T. Curiel.

- 6382 *scid* Thymocytes with TCR $\beta$  Gene Rearrangements Are Targets for the Oncogenic Effect of *SCL* and *LMO1* Transgenes. David S. Chervinsky, Du H. Lam, Michael P. Melman, Kenneth W. Gross, and Peter D. Aplan.

## Regular Articles

## Carcinogenesis

- 6388 Human OGG1, a Protein Involved in the Repair of 8-Oxoguanine, Is Inhibited by Nitric Oxide. Meeta Jaiswal, Nicholas F. LaRusso, Nenichi Nishioka, Yusaku Nakabeppu, and Gregory J. Gores.

- 6255 Induction of Transplantable Mouse Renal Cell Carcinoma by Streptozotocin: *In Vivo* Growth, Metastases, and Angiogenic Phenotype. M. Eilene Gruys, Timothy C. Back, Jeff Subleski, Theresa A. Willrout, Jong-Keuk Lee, Laura Schmidt, Motohiro Watanabe, Roscoe Stanyon, Jerrold M. Ward, Jon M. Wigginton, and Robert H. Willrout.

- 6264 Membrane Type 1-Matrix Metalloproteinase-Mediated Degradation of Type I Collagen by Oral Squamous Cell Carcinoma Cells. Sadie Aznavoorian, Bryan A. Moore, L. Donita Alexander-Liu, Stephanie L. Hallit, L. Jack Windsor, and Jeffrey A. Engler.

- 6276 *In Vivo* Progression of LAPC-9 and LNCaP Prostate Cancer Models to Androgen Independence Is Associated with Increased Expression of Insulin-like Growth Factor 1 (IGF-1) and IGF-1 Receptor (IGF-1R). Tara Nickerson, Francis Chang, Donald Lorimer, Steven P. Smeekens, Charles L. Sawyers, and Michael Pollak.

- 6281 Implication of Tyrosine Kinase Receptor and Steel Factor in Cell Density-dependent Growth in Cervical Carcinoma and Leukemias. Julio R. Caceres-Cortes, José A. Alvarado-Moreno, Karan Waga, Rosalva Rangel-Corona, Alberto Moury-Garcia, Leticia Rocha-Zavala, Julia Uribe-Ramos, Benji Weiss-Steider, Andre Haman, Patrice Hug, Roland Brousseau, Trang Hoang.

## September 1, Number 17

## Clinical Investigations

- 6394 Carbonic Anhydrase (CA IX) Expression, a Potential New Intrinsic Marker of Hypoxia: Correlations with Tumor Oxygen Measurements and Prognosis in Locally Advanced Carcinoma of the Cervix. Juliette A. Lancaster, Adrian L. Harris, Susan E. Davidson, John P. Logue, Robert D. Hunter, Charles C. Weyoff, Jaromir Pastorek, Peter J. Ratcliffe, Ian J. Stratford, and Catherine M. L. West.

- 6400 Interstitial Fluid Pressure Predicts Survival in Patients with Cervix Cancer Independent of Clinical Prognostic Factors and Tumor Oxygen Measurements. Michael Milevitch, Anthony Fyles, David Hedley, Melina Pintilie, Wilfred Levin, Lee Manchillo, and Richard Hill.

## Experimental Therapeutics

- 6406 Secondary Lymphoid Organ Chemokine Reduces Pulmonary Tumor Burden in Spontaneous Murine Bronchioloalveolar Cell Carcinoma. Sherven Sharma, Marina Stolina, Li Zhu, Ying Lin, Raj Ratra, Min Huang, Robert Strieter, and Steven M. Dubnitt.

- 6413 Mechanisms Associated with Tumor Vascular Shut-Down Induced by Combretastatin A-4 Phosphate: Intravital Microscopy and Measurement of Vascular Permeability. Gillian M. Towner, Vivien E. Price, John Wilson, Maja Comaraz, Suping Shan, Mark W. Dewhirst, Paul R. Barber, Borivoj Vojnovic, and David J. Chaplin.

- 6423 Amifostine Protects against Early but not Late Toxic Effects of Doxorubicin in Infant Rats. Kirti Jahankainen, Timo Jahankainen, Toivo T. Salmi, Konstantin Svecnikov, Staffan Ekoborg, and Otto Söder.

- 6428 A Hepatocellular Carcinoma-specific Adenovirus Variant, CV908, Eliminates Distant Human Liver Tumors in Combination with Doxorubicin. Yuanhao Li, De-Chao Yu, Yu Chen, Pinky Amin, Hong Zhang, Natalie Nguyen, and Daniel R. Henderson.

- 6437 Apoptotic Signaling in Polyamine Analogue-treated SK-MEL-28 Human Melanoma Cells. Ying Chen, Deborah L. Kramer, Paula Diegelman, Slavojub Vujic, and Carl W. Porter.

## Immunology

- 6445 Tumor Cell Lyso-pulsed Human Dendritic Cells Induce a T-Cell Response against Pancreatic Carcinoma Cells: an *In Vivo* Model for the Assessment of Tumor Vaccines. Marc Schmitt, Peter Galambos, Christoph Scholz, Florian Then, Marc Dauer, Stefan Endres, and Andreas Eigler.

- 6451 Immune and Clinical Responses in Patients with Metastatic Melanoma to CD34<sup>+</sup> Progenitor-derived Dendritic Cell Vaccine. Jacques Banchereau, A. Karolina Palecka, Madhav Bhodapkar, Susan Burkeholder, Nicolas Taquet, Alexandre Rolland, Sybil Taquet, Sebastien Coquery, Knut M. Wittkowski, Nina Bhargava, Luis Pineiro, Ralph Steinman, and Joseph Fay.

- 6459 Multidrug Resistance-associated Protein 3 Is a Tumor Rejection Antigen Recognized by HLA-A2:DM2-restricted Cytotoxic T Lymphocytes. Akira Yamada, Kouichiro Kawano, Makoto Koga, Tomoko Matsumoto, and Kyogo Itoh.

## Molecular Biology and Genetics

- 6467 p63 Expression Is Associated with p53 Loss in Oral-Esophageal Epithelia of p53-deficient Mice. Yashir Suliman, Oliver G. Opitz, Anjali Aavadhani, Timothy C. Burns, Wafik El-Deiry, David T. Wong, and Anil K. Rustgi.

- 6474 Prediction of Sensitivity of Esophageal Tumors to Adjuvant Chemotherapy by cDNA Microarray Analysis of Gene-Expression Profiles. Chikashi Kohara, Tetsuhiko Tsunoda, Toshio Tanaka, Hideaki Yamana, Yoichi Furukawa, Kenji Ono, Osamu Kitahara, Hiroshi Zembutsu, Rempai Yanagawa, Koichi Hirata, Toshiohaki Takagi, and Yusuke Nakamura.

- 6480 MLL-ENL Causes a Reversible and *myc*-dependent Block of Myelomonocytic Cell Differentiation. Silke Schreiner, Marco Birke, Maria-Paz Garcia-Cuellar, Olaf Zilles, Johann Greil, and Robert Karl Slany.

- 6487 Inverse Regulation of Cyclin B1 by c-Myc and p53 and Induction of Tetraploidy by Cyclin B1 Overexpression. Xiao-Ying Yin, Linette Grove, Nabuhita S. Datta, Karen Katla, Michael W. Long, and Edward V. Prochownik.

- 6494 Role of HPC2/ELAC2 in Hereditary Prostate Cancer. Liang Wang, Shannon K. McDonnell, David A. Elkins, Susan L. Slager, Eric Christensen, Angela F. Marks, Julie M. Cunningham, Brett J. Peterson, Steven J. Jacobsen, James R. Cerhan, Michael L. Blute, Daniel J. Schaid, and Stephen N. Thibodeau.

- 6290 An I $\kappa$ B $\alpha$  Inhibitor Causes Leukemia Cell Death through a p38 MAP Kinase-dependent, NF- $\kappa$ B-independent Mechanism. Xiaozhang Hu, William E. Janssen, Lynn C. Mosciński, Matthew Bryington, Alina Dangusa, Natalie Reza-Zadeh, Brian A. Babbitt, and Kenneth S. Zuckerman.

- 6297 *p27<sup>Waf1/Cip1</sup>* Is an Important Determinant of Intestinal Cell Response to Sulindac *In Vivo* and *In Vitro*. Wafar Yang, Anna Velich, John Mariadason, Courtney Nicholas, Georgia Corner, Michele Houston, Winfried Edelmann, Raju Kuchelapati, Peter R. Holt, and Leonard H. Augenlicht.

## 6303 Announcements

Future Annual Meetings of the American Association for Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## 6304 Correction

N. Hansen-Algenstaedt et al., *Cancer Res.*, 60: 4556-4560, 2000.

## 6305 Author Index

## Tumor Biology

- 6500 Activated Extracellular Signal-regulated Kinases: Association with Epidermal Growth Factor Receptor/Transforming Growth Factor  $\alpha$  Expression in Head and Neck Squamous Carcinoma and Inhibition by Anti-Epidermal Growth Factor Receptor Treatments. Joan Albanel, Jordi Codony-Servat, Federico Rojo, José M. Del Campo, Silvia Sautou, Jodi Ando, Guillermo Rasgall, Jordi Giralt, José Roselló, Robert I. Nicholson, John Mendelsohn, and José Baselga.

- 6511 Endostatin-induced Modulation of Plasminogen Activation with Concomitant Loss of Focal Adhesions and Actin Stress Fibers in Cultured Human Endothelial Cells. Sara A. Wickstrom, Tanja Veikkola, Marko Rehn, Taina Pihlajaniemi, Kari Alitalo, and Jorma Keski-Oja.

- 6517 Role of Signal Transducer and Activator of Transcription 5 in Nucleophosmin/Angiogenic Lymphoma Kinase-mediated Malignant Transformation of Lymphoid Cells. Malgorzata Nieborowska-Skorska, Artur Slupianek, Ligan Xue, Qian Zheng, Puthiyaveetil N. Raghunath, Grazyna Hoser, Mariusz A. Wasik, Stephan W. Morris, and Tomasz Skorski.

- 6524 Mapping Extracellular pH in Rat Brain Gliomas *In Vivo* by <sup>31</sup>P Magnetic Resonance Spectroscopic Imaging: Comparison with Maps of Metabolites. María-L. García-Martin, Gwenaél Héroguez, Chantal Rémy, Régine Farion, Paloma Ballesteros, Jonathan A. Coles, Sebastián Cerdán, and Anne Ziegler.

- 6532 HOXB7: A Key Factor for Tumor-associated Angiogenic Switch. Alessandra Carli, Federica Felicetti, Ennio Meccia, Lisabianca Botto, Mariella Parnetti, Antonella Stoppocaro, Cesare Pesciello, and Mario P. Colombo.

- 6540 Overexpression of IRF9 Confers Resistance to Antimicrotubule Agents in Breast Cancer Cells. Kathryn E. Laker, Christina M. Pica, Robert D. Schreiber, and David Pwinka-Worms.

- 6548 Constitutive Expression of Hypoxia-inducible Factor-1 $\alpha$  Renders Pancreatic Cancer Cells Resistant to Apoptosis Induced by Hypoxia and Nutrient Deprivation. Nobuaki Akakura, Masahito Kobayashi, Iori Horuchi, Akihiro Suzuki, Jingxin Wang, Jian Chen, Hiroto Niseki, Ken-ichi Kawamura, Masao Hosokawa, and Masahiro Asaka.

- 6555 The Role of the DNA Mismatch Repair System in the Cytotoxicity of the Topoisomerase Inhibitors Camptothecin and Etoposide in Human Colorectal Cancer Cells. Sandrine Jacob, Mélanie Agnès, David Falik, and Françoise Praz.

- 6563 Suppression of  $\beta$ -Catenin Inhibits the Neoplastic Growth of APC-Mutant Colon Cancer Cells. Haeri Roh, Douglas W. Green, Craig B. Boswell, James A. Pippin, and Jeffrey A. Drebin.

- 6569 Activation of Extracellular Signal-regulated Kinase and c-Jun-NH<sub>2</sub>-terminal Kinase but not p38 Mitogen-activated Protein Kinase Is Required for RRR- $\alpha$ -Tocopheryl Succinate-induced Apoptosis of Human Breast Cancer Cells. Weiping Yu, Qiao Yin Liao, Feras M. Hamash, Bob G. Sanders, and Kimberly Kline.

- 6577 Impact of Ionizing Radiation and Genetic Background on Mammary Tumorigenesis in p53-deficient Mice. Michael G. Backlund, Scott L. Trasti, Dana C. Backlund, Victoria L. Cressman, Virginia Godfrey, and Beverly H. Kolter.

- 6583 ErbB2/HER Kinase Modulates Cellular p27<sup>Kip1</sup> and Cyclin D1 through Multiple Signaling Pathways. Anne E. G. Lenferink, Dagmar Busse, W. Michael Flanagan, F. Michael Yakes, and Carlos L. Arteaga.

- 6592 The Mechanism of the Growth-inhibitory Effect of Coxsackie and Adenovirus Receptor (CAR) on Human Bladder Cancer: A Functional Analysis of CAR Protein Structure. Takatsugu Okagawa, Rey-Chen Peng, Yingming Li, Jeffrey M. Bergelson, Arthur I. Sagalowsky, and Jer-Tsong Hsieh.

## 6601 Announcements

Future Annual Meetings of the American Association  
for Cancer Research  
AACR Special Conferences in Cancer  
Research  
Recent Deaths  
Calendar of Events

## 6603 Employment Register

## 6618 Author Index

## September 15, Number 18

## Advances in Brief

- 6619 **Molecular Classification of Estrogens.** V. Craig Jordan, Jennifer MacGregor Schafer, Anait S. Levenson, Hong Liu, Katherine M. Pease, Laura A. Simons, and James W. Zopf.
- 6624 **Inhibition of Glioma Angiogenesis and Growth in Vivo by Systemic Treatment with a Monoclonal Antibody against Vascular Endothelial Growth Factor Receptor-2.** Philip Kunkel, Ulrike Ulbricht, Peter Bohlen, Marc A. Brockmann, Regina Fillbrandt, Dimitrios Stavrou, Manfred Westphal, and Katrin Lamszus.
- 6629 **Identification of *cIAP1* As a Candidate Target Gene within an Amplification at 11q22 in Esophageal Squamous Cell Carcinomas.** Issei Imoto, Zeng-Quan Yang, Atsuhiko Pimhakham, Hitoshi Tsuda, Yutaka Shimada, Masayuki Imamura, Misao Ohi, and Johji Inazawa.
- 6635 **Acquired Mutations in the *MXR/BCRP/ABCP* Gene Alter Substrate Specificity in *MXR/BCRP/ABCP*-overexpressing Cells.** Yasumasa Honjo, Christine A. Hryciak, Qing-Wu Yan, Wilma Y. Medina-Perez, Robert W. Robey, Anne van de Lutz, Thomas Litman, Michael Dean, and Susan E. Bates.
- 6640 **Characterization of the 13q14 Tumor Suppressor Locus in CLL: Identification of *ALTI1*, an Alternative Splice Variant of the *LEU2* Gene.** Florencia Bultrich, Hideomi Fujii, George Calin, Hideaki Mabuchi, Massimo Negrini, Yuri Pekarsky, Laura Rasetti, Hansjörg Alder, John C. Reed, Michael J. Keating, Thomas J. Kipps, and Carlo M. Croce.
- 6649 **Cell Surface Tumor Endothelial Markers Are Conserved in Mice and Humans.** Eleanor B. Carson-Walter, D. Neil Watkins, Akash Nanda, Bert Vogelstein, Kenneth W. Kinzler, and Brad St. Croix.
- 6656 **Accumulation of  $\beta$ -Catenin Protein and Mutations in Exon 3 of  $\beta$ -Catenin Gene in Gastrointestinal Carcinoid Tumors.** Masahiko Fujimoto, Satoshi Ikeda, Yosuke Shimizu, Masazumi Okajima, and Toshimasa Aishara.
- 6660 ***APAF-1* Is a Transcriptional Target of p53 in DNA Damage-induced Apoptosis.** Ana I. Robles, Nicole A. Bennetts, Amy B. Foraker, and Curtis C. Harris.
- 6665 **Heterozygous Mice for the Transforming Growth Factor- $\beta$  Type II Receptor Gene Have Increased Susceptibility to Hepatocellular Carcinogenesis.** Young-Hyuck Im, Heung Tae Kim, Isaac Yi Kim, Valentina M. Factor, Ki-Baik Hahn, Mario Anzano, Ja-June Jang, Kathleen Flanders, Diana C. Haines, Snorre S. Thorgeirsson, Andrew Sizeland, and Seong-Jin Kim.
- 6669 **HIF-1-dependent Regulation of Hypoxic Induction of the Cell Death Factors *BNIP3* and *NIX* in Human Tumors.** Heidi M. Sowter, Peter J. Ratcliffe, Peter Watson, Arnold H. Greenberg, and Adrian L. Harris.
- 6674 **AK1 Pathway Activation Converts Anaplastic Astrocytoma to Glioblastoma Multiforme in a Human Astrocyte Model of Glioma.** Yukihiko Sonoda, Tomoko Ozawa, Ken D. Aldape, Dennis F. Deen, Mitchell S. Berger, and Russell O. Pieper.
- 6679 **Lung Tumor *KRAS* and *TP53* Mutations in Nonsmokers Reflect Exposure to PAH-Rich Coal Combustion Emissions.** David M. DeMarini, Stefano Landi, Defa Tian, Nancy M. Hanley, Xueming Li, Fuding Hu, Barbara C. Roop, Marc J. Mass, Phoulonee Keothavong, Weimin Gao, Magali Olivier, Pierre Hainaut, and Judy L. Mumford.
- 6682 **MAGE-A Gene Expression Pattern in Primary Breast Cancer.** Marcus Ote, Menelaos Zafraas, Lutz Riedhardt, Uwe Pichmeier, Thomas Lönning, Fritz Janicke, and Klaus Pantel.
- 6688 **Frequent Epigenetic Inactivation of *RASSF1A* in Human Bladder Carcinomas.** Min-Goo Lee, Hee-Yul Kim, Do-Sun Byun, Sun-Ju Lee, Chong-Hyun Lee, Jin Il Kim, Sung-Goo Chang, and Sung-Gil Chi.
- 6693 **Transfer of E2F-1 to Human Glioma Cells Results in Transcriptional Up-Regulation of Bcl-2, Candelaria Gomez-Manzano, Paraskevi Mitrilanga, Jun Fuyou, He-Yang Lee, Min Hu, Kevin B. Spurgers, Tricia L. Glass, Dimple Kaul, Ta-Jen Liu, Timothy J. McDonnell, and W. K. Alfred Yung.**
- 6698 **Evidence Supporting a Role for Mitochondrial Respiration in Apoptosis Induction by the Synthetic Retinoid CD437.** Nansen Hui, Jr., Emile M. Yousef, and Reuben Lotan.
- 6703 **Subcellular Distribution of p53 and p73 Are Differentially Regulated by MDM2.** Jiye Guo, Linghu Nie, Hidehiko Kawai, and Zhi-Min Yuan.
- 6708 **Association between Carcinogen-DNA Adducts in White Blood Cells and Lung Cancer Risk in the Physicians Health Study.** Deliang Tang, David H. Phillips, Meir Stampfer, LaVerne A. Money, Yanhui Hsu, Stan Cho, Wei-Yan Tsai, Jing Ma, Kathleen J. Cole, Meadhbh Ni Shi, and Frederica P. Perera.
- 6713 **Tumor Location and Growth Pattern Correlate with Genetic Signature in Oligodendroglioma Neoplasms.** Magdalena C. Zlatescu, AliReza Tehrani-Yardi, Hikaru Sasaki, Joseph F. Megyesi, Rebecca A. Betensky, David N. Louis, and J. Gregory Cairncross.

## Regular Articles

## Biochemistry and Biophysics

- 6716 **Catechol-O-Methyltransferase (COMT)-mediated Metabolism of Catechol Estrogens: Comparison of Wild-Type and Variant COMT Isoforms.** Sheila Dawling, Nady Roodi, Raymond L. Mernaugh, Xiaohong Wang, and Fritz F. Paul.
- 6971 **Constitutive Expression of ErbB-2 in Gallbladder Epithelium Results in Development of Adenocarcinoma.** Kaoru Kiguchi, Seiji Carvajal, Keith Chan, Linda Beltrán, Lynn Ruffino, Junjun Shen, Takashi Matsumoto, Naoki Yoshimi, and John DiGiovanni.
- 6977 **BARX2 Induces Catherin 6 Expression and Is a Functional Suppressor of Ovarian Cancer Progression.** Grant C. Sellar, Li Li, Karen P. Wan, Barry D. Nelkin, Genevieve J. Rabaux, Euan A. Strachan, Eric P. Miller, David J. Porteous, John F. Smyth, and Hani Gabra.

## Carcinogenesis

- 6723 **Modulation of Intracellular  $\beta$ -Catenin Localization and Intestinal Tumorigenesis in Vivo and in Vivo by Sphingolipids.** Eva M. Schmelz, Paul C. Roberts, Elizabeth M. Kusin, Lori A. Lemmonier, M. Cameron Sallards, Dirk L. Dillehay, and Alfred H. Merrill, Jr.
- 6730 **Epstein-Barr Virus Encoded Latent Membrane Protein-1 Induces Epithelial Cell Proliferation and Sensitizes Transgenic Mice to Chemical Carcinogens.** John A. Curran, Fiona S. Lavery, Donald Campbell, Jennifer Macdarmid, and Joana B. Wilson.
- 6739 **Comparison of the Short-Term Biological Effects of 7 $\alpha$ -[9-(4,4,5,5,5-pentafluoropentyl)undecyl]-1,3,5, (10)-trien-3,17 $\beta$ -diol (Faslodex) versus Tamoxifen in Postmenopausal Women with Primary Breast Cancer.** John F. Robertson, Robert I. Nicholson, Nigel J. Bundred, Elizabeth Anderson, Zenon Rayter, Michael Dowsett, John N. Fox, Julia M. W. Gee, Alan Webster, Alan E. Wakeling, Charles Morris, and Michael Dixon.

## Clinical Investigations

## Endocrinology

- 6747 **Differential Insulin-like Growth Factor I Receptor Signaling and Function in Estrogen Receptor (ER)-positive MCF-7 and ER-negative MDA-MB-231 Breast Cancer Cells.** Monica Butturini, Catia Morelli, Loredana Mauro, Sebastiano Andò, and Eva Surmacz.
- 6755 **Transcriptional Regulation of the Estrogen-inducible p52 Breast Cancer Marker Gene by the ER Family of Orphan Nuclear Receptors.** Densheng Lu, Yoshimitsu Kiriya, Karen Y. Lee, and Vincent Giguère.
- 6762 **Molecular Markers and Long-Term Recurrences in a Large Cohort of Patients with Sporadic Adrenocortical Tumors.** Christine Gicquel, Xavier Bertrange, Véronique Gaston, Joël Coste, Albert Lenoel, Eric Baudin, Jérôme Berthart, Yves Chappuis, Jean-Marc Duclos, Martin Schlumberger, Pierre-François Plouin, Jean-Pierre Luton, and Yves Le Bouc.
- 6768 **Expression of Gonadotropin Receptor and Growth Responses to Key Reproductive Hormones in Normal and Malignant Human Ovarian Surface Epithelial Cells.** Vygyl Sied, Gregory Uliniski, Samuel C. Mok, Gary K. Yiu, and Shuk-Mei Ho.

## Epidemiology and Prevention

- 6777 **Genistein in the Diet Reduces the Incidence of Poorly Differentiated Prostatic Adenocarcinomas in Transgenic Adenocarcinoma of the Prostate (TRAP) Mice.** Marcel, Coral A. Lamartinière, Isam-Eldin Eltoum, Norman M. Greenberg, and Ada Elgavish.

## Experimental Therapeutics

- 6783 **In Vivo Targeted Killing of Prostate Tumor Cells by a Synthetic Amphotericin B Peptide Modified with Two  $\gamma$ -linked Glutamate Residues at the COOH Terminus.** Patrick Warren, Laiji Li, Wendy Song, Eric Holle, Yangshang Wei, Thomas Wagner, and Xianzhong Yu.
- 6788 **Inhibition of Tumor Cell Invasion and Angiogenesis by Motuporamines.** Calvin D. Rookley, David E. Williams, Lianne M. McHardy, Kevin G. Leong, Arnette Troussard, Aly Karsan, Raymond J. Andersen, Shokat Dedhar, and Michael Roberge.
- 6795 **Adenovirus-mediated Tissue-targeted Expression of a Caspase-9-based Artificial Death Switch for the Treatment of Prostate Cancer.** Xiaoming Xie, Xiaojin Zhao, Yanzhang Liu, Jiafeng Zhang, Robert J. Matsuk, Kevin M. Slawin, and David M. Spencer.
- 6805 **Methionine Cancer Gene Therapy with Selenomethionine as Suicide Prodrug Substrate.** Kenji Miki, Mitsuaki Anshu Gupta, Yi Ba, Yuying Tan, Waddah Al-Rifai, Michael Bouvet, Masatoshi Makuuchi, A. R. Moossa, and Robert M. Hoffman.
- 6811 **The Susceptibility of Tumors to the Antivascular Drug Combretastatin A4 Phosphate Correlates with Vascular Permeability.** Daniel A. Beauregard, Sally A. Hill, Dai J. Chaplin, and Kevin M. Brindle.
- 6816 **Taurolidine: Cytotoxic and Neoplastic Evaluation of a Novel Antineoplastic Agent.** Paul Calabresi, Frederick A. Gosselin, and James W. Dumowski.
- 6822  **$\alpha$ 2-6-Sialylation of Cell-Surface N-Glycans Inhibits Glioma Formation in Vivo.** Hirotsuka Yamamoto, Angelica Oviedo, Charles Sweeney, Tasuku Saito, and Joseph R. Moskal.
- 6830 **Intravital Microscopy Reveals Novel Antivascular and Antitumor Effects of Endostatin Delivered Locally by Aligned-encapsulated Cells.** Tracy-Ann Read, Mohammed Farhadi, Rolf Bjerkvig, Bjørn Reino Olsen, Anne Mari Røksd, Peter C. Huxthly, and Peter Vajkoczy.
- 6838 **Tumor-specific Up-regulation of the Nonclassical Class I HLA-G Antigen Expression in Renal Carcinoma.** El Chérif Ibrahim, Nadia Guerra, Marie-José Terrier-Lacombe, Eric Angevin, Salem Chouah, Edgardo D. Carosella, Anne Caignard, and Pascale Paul.
- 6846 **The Epithelial Tumor Antigen MUC1 Is Expressed in Hematological Malignancies and Is Recognized by MUC1-specific Cytotoxic T-Lymphocytes.** Peter Brossart, Anja Schneider, Patricia Dill, Theodora Schumann, Frank Grunhach, Stefan Wirths, Lothar Kanz, Hans-Jörg Bühring, and Wolfram Brügger.

## October 1, Number 19

- 6982 **SKY1 Is Involved in Cisplatin-induced Cell Kill in *Saccharomyces cerevisiae*, and Inactivation of Its Human Homologue, *SRP4*, Induces Cisplatin Resistance in a Human Ovarian Carcinoma Cell Line.** Paul W. Schenk, Antonius W. M. Boersma, Jooris A. Brandman, Hans den Dulk, Herman Burger, Gerrit Stoter, Jaap Brouwer, and Kees Noctor.
- 6987 **Plasmids with a Mammalian Replication Origin and a Matrix Attachment Region Initiate the Event Similar to Gene Amplification.** Noriaki Shimizu, Yuri Mura, Yu Sakamoto, and Ken Tsutsui.

## Molecular Biology and Genetics

- 6851 **Serological Analysis of Human Anti-Human Antibody Responses in Colon Cancer Patients Treated with Repeated Doses of Humanized Monoclonal Antibody A33.** Gerd Rinter, Leonard S. Cohen, Clarence Williams, Jr., Elizabeth C. Richards, Lloyd J. Old, and Sydney Wetli.
- 6860 **On the Site and Mode of Antigen Presentation for the Initiation of Clonal Expansion of CD8 T Cells Specific for a Natural Tumor Antigen.** Xue-Feng Bai, Jian-Xin Gao, Jinqing Liu, Jing Wen, Pan Zheng, and Yang Liu.
- 6868 **Antigenicity of Fusion Proteins from Sarcoma-associated Chromosomal Translocations.** B. Scott Worley, Leon T. van den Broeke, Theresa J. Goletz, C. David Pendleton, Emily M. Dachtbach, Elaine K. Thomas, Francesco M. Mancinella, Lee J. Helman, and Jay A. Berzofsky.
- 6876 **Specific Inhibition of Serine- and Arginine-rich Splicing Factors Phosphorylation, Spliceosome Assembly, and Splicing by the Antitumor Drug NB-560.** Barbara Pilch, Eric Allmand, Michael Facompré, Christian Bailly, Jean-François Rioux, Johann Soret, and Jamal Tazi.
- 6885 **Distinctive Molecular Profiles of High-Grade and Low-Grade Gliomas Based on Oligonucleotide Microarray Analysis.** David S. Rickman, Miroslav P. Bobek, David E. Misk, Roko Kusik, Mila Blavias, David M. Karnit, Jeremy Taylor, and Samir M. Hanash.
- 6892 **Neuroblastic and Schwannian Stromal Cells of Neuroblastoma Are Derived from a Tumoral Progenitor Cell.** Jaume Mora, Nai-Kong V. Cheung, Gloria Juan, Peter Illei, Irene Cheung, Muzaffar Akram, Susan Chi, Marc Ladanyi, Carlos Cordon-Cardo, and William L. Gerald.
- 6899 **p53-dependent Suppression of Uridine Phosphorylase Gene Expression Involves Direct Promoter Interaction.** Dekun Zhang, Deliang Cao, Rosalind Russell, and Giuseppe Pizzorno.
- 6906 **Cortactin Potentiates Bone Metastasis of Breast Cancer Cells.** Yansong Li, Mehdi Tondravi, Juli Liu, Elizabeth Smith, Christian C. Haedenschild, Michele Kaczmarek, and Xi Zhan.
- 6912 **Molecular Genetics of Ulcerative Colitis-associated Colon Cancer in the Interleukin 2- and  $\beta$ 2-Microglobulin-deficient Mouse.** Kyoung-Jin Sohn, Samir A. Shah, Sarah Reid, Monica Choi, Julie Carrier, Martina Comiskey, Cox Terhorst, and Young-In Kim.
- 6918 **Sulindac Sulfide-induced Apoptosis Involves Death Receptor 5 and the Caspase 8-dependent Pathway in Human Colon and Prostate Cancer Cells.** Ying Huang, Qin He, Michael J. Hillman, Rong Rong, and M. Saied Sheikh.
- 6925 **Self-deleting Suicide Vectors (SDSV): Selective Killing of p53-deficient Cancer Cells.** Thomas André, Christoph Ebersperger, Eva-Maria Westphal, Thomas Kleiner, A. Francis Stewart, Andreas Westhof, Peter Müller, Rainer Knaus, and Harald von Melchner.
- 6931 ***ABL1* Promoter Methylation Can Exist Independently of *BCR-ABL1* Transcription in Chronic Myeloid Leukemia Hematopoietic Progenitors.** Baodong Sun, Guanchao Jiang, Muhammad-Ali A. Zaydan, Vincent F. La Russa, Hana Safah, and Melanie Ehrlich.

## Tumor Biology

- 6938 **Antitoxin (NPP-2), a Metastasis-enhancing Motogen, Is an Angiogenic Factor.** Suk Woo Nam, Timothy Clair, Young-Sik Kim, Andrew McMarlin, Elliott Schiffmann, Lance A. Liotta, and Mary L. Stracke.
- 6945 **Blocking Tumor Growth, Invasion, and Metastasis by Maspin in a Syngeneic Breast Cancer Model.** Heidi Y. Shi, Weiguo Zhang, Rong Liang, Shaji Abraham, Francis S. Kittrell, Daniel Medina, and Ming Zhang.
- 6952 **Central Role of p53 on Regulation of Vascular Permeability Factor/Vascular Endothelial Growth Factor (VPF/VEGF) Expression in Mammary Carcinoma.** Soumitro Pal, Kaustubh Datta, and Debrahita Mukhopadhyay.
- 6958 **A Truncated Precursor Form of Prostate-specific Antigen Is a More Specific Serum Marker of Prostate Cancer.** Stephen D. Mikolajczyk, Kathy M. Marker, Lisa S. Millar, Abhay Kumar, Mohammad S. Saedi, Janice K. Payne, Cindy L. Evans, Carlton L. Gassior, Harry J. Linton, Philip Carpenter, and Harry G. Rittenhouse.

## Letter to the Editor

- 6964 **Correspondence re: W. Paile's Letter to the Editor.** Cancer Res., 60: 1146, 2000. Alina Romanenko, Alexander Vozianov, Keiichiro Morimura, Shoji Fukushima.

## 6966 Announcements

Future Annual Meetings of the American Association for Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## 6968 Author Index

- 7002 Complete Inhibition of Vascular Endothelial Growth Factor (VEGF) Activities with a Bifunctional Dimer Directed against Both VEGF Kinase Receptors, *fls*-like Tyrosine Kinase Receptor and Kinase Insert Domain-containing Receptor.** Din Li, Xena Jimenez, Haifan Zhang, Yan Wu, Peter Bohlen, Larry Witt, and Zhenping Zhu.

- 7009 Adenovirus-mediated Transfection of Caspase-8 Augments Apoptosis and Inhibits Peritoneal Dissemination of Human Gastric Carcinoma Cells.** Susumu Nishimura, Masaki Adachi, Taduo Ishida, Takahiro Matsunaga, Hiroaki Uchida, Hirofumi Hamada, and Kohroshi Imai.

- 7015 Identification of a Monoclonal Antibody as a Major Target for Mitochondrial DNA Alterations in Human Tumors.** Monicourt Sanchez-Cepeda, Paola Parella, Shuji Nomoto, Daniel Cohen, Yan Xiao, Muel Esteller, Carmen Jeronimo, Richard C. K. Jordan, Theodora Nicol, Wayne M. Koch, Mark Schoenberg, Paola Mazzarelli, Vito M. Fazio, and David Sidransky.

- 7020 A Nonsense Mutation in *MLH1* Causes Exon Skipping in Three Unrelated HNPCC Families.** Alessandro Stella, Anja Wagner, Karahisa Shito, Steven M. Lipkin, Patrice Watson, Ginevra Guanti, Henry T. Lynch, Riccardo Fodde, and Bo Liu.

- 7025 Synergistic Activation of Functional Estrogen Receptor (ER)- $\alpha$  by DNA Methyltransferase and Histone Deacetylase Inhibition in Human ER- $\alpha$ -negative Breast Cancer Cells.** Xiaowei Yang, Dawn L. Phillips, Anne T. Ferguson, William G. Nelson, James G. Herman, and Nancy E. Davidson.

- 7030 Substitutions That Compromise the Ionizing Radiation-induced Association of p53 with 14-3-3 Proteins Also Compromise the Ability of p53 to Induce Cell Cycle Arrest.** Elena S. Stavridis, Nabil H. Chehab, Asra Malikzay, and Thomas D. Halazonetis.

- 7034 Frequent Epigenetic Inactivation of *RASSF1A* by Aberrant Promoter Hypermethylation in Human Gastric Adenocarcinoma.** Do-Sun Byun, Min-Goo Lee, Kwon-Seok Cha, Byung-Gyu Ryu, and Sung-Gil Choi.

- 7039 Deletion of *AXIN1*, a Component of the WNT/Wingless Pathway, in Sporadic Medulloblastomas.** R. P. Dahmen, A. Koch, D. Deshaves, J. C. Tonn, N. Sörensen, F. Berthold, J. Behrens, W. Birchmeier, O. D. Wiestler, and T. Pletsch.

- 7044 High Expression of S-Phase Kinase-interacting Protein 2, Human F-box Protein, Correlates with Poor Prognosis in Oral Squamous Cell Carcinomas.** Yasuaki Kudo, Shojiro Kitajima, Sunao Sato, Mutsumi Miyachi, Ikiko Ogawa, and Takashi Takata.

- 7048 *In Vivo* Intracellular Signaling as a Marker of Antiangiogenic Activity.** Carmen C. Solorzano, Young D. Jung, Corazon D. Bucana, David J. McConkey, Gary E. Gallick, Gerald McMahon, and Lee M. Ellis.

- 7052 Therapeutic Efficacy of E2F1 in Pancreatic Cancer Correlates with TP73 Induction.** Florian Röddiger, Thorsten Stewé, Sonja Zimmermann, and Brigitte M. Pützner.

- 7056 Brain Enriched Hyaluronan Binding (BEHAB)/Brevican Increases Aggressiveness of CNS-I Gliomas in Lewis Rats.** Catherine L. Nutt, Cynthia A. Zerillo, Gail M. Kelly, and Susan Hochfield.

- 7060 Suppression of Intestinal and Mammary Neoplasia by Lifetime Administration of Aspirin in *Apc<sup>Min/+</sup>* and *Apc<sup>Min/+</sup>* Mice.** Owen J. Sansom, Lesley A. Stark, Malcolm G. Dunlop, and Alan R. Clarke.

## Regular Articles

## Biochemistry and Biophysics

- 7065 Retinoic Acid Biosynthesis by Normal Human Breast Epithelium Is via Aldehyde Dehydrogenase 6, Absent in MCF-7 Cells.** Brent N. Rexer, Wen Li Zheng, and David E. Ong.

- 7071 Redox-mediated Effects of Selenium on Apoptosis and Cell Cycle in the LNCaP Human Prostate Cancer Cell Line.** Weisong Zhong and Terry D. Oberley.

- 7079 Inhibition of Focal Adhesion Kinase Expression or Activity Disrupts Epidermal Growth Factor-stimulated Signaling Promoting the Migration of Invasive Human Carcinoma Cells.** Christof R. Haack, David J. Siegel, Datsun A. Hsia, Joseph C. Loftus, William A. Giarde, Brent P. Monia, and David D. Schlaepfer.

## Carcinogenesis

- 7091 Collagenase-3 Expression in Breast Myofibroblasts as a Molecular Marker of Transition of Ductal Carcinoma *in Situ* Lesions to Invasive Ductal Carcinomas.** Boye Schnack Nielsen, Fritz Runk, José Manuel López, Milagros Balbin, Francisco Vireno, Leif Rege Lund, Keld Dam, and Carlos López-Otin.

- 7101 Alterations of  $\beta$ - and  $\gamma$ -Catenin in N-Butyl-N-(4-hydroxybutyl) nitrosamine-induced Rat Liver Bladder Cancer.** Hiroaki Shimizu, Mikio Igawa, Shiro Urakami, Karashi Shigeno, Tatsuki Yoneda, Masaharu Terashima, Masao Deguchi, Leopoldo Ribeiro-Filho, and Rajiv Dahiya.

- 7110 Methylated CpG Dinucleotides Are the Preferential Targets for G-to-T Transversion Mutations Induced by Benzo[a]pyrene Diol Epoxide in Mammalian Cells: Similarities with the p53 Mutation Spectrum in Smoking-associated Lung Cancers.** Jung-Hoon Yoon, Leslie E. Smith, Zhaohui Feng, Moon-shong Tang, Chong-Soon Lee, and Gerald P. Pfeifer.

- 7118 Evidence for a Putative Senescence Gene Locus within the Chromosomal Region 10p14-p15.** Manuela Pognée, Claudia Buchs, Karin Ber, Lars Jansen, Nikola Wagenbach, Eric J. Stunberg, Richard Kirchmayr, Achim Schneider, and Matthias Düst.

## Review

- 7369 The Selection for Mismatch Repair Defects in Hereditary Nonpolyposis Colorectal Cancer: Revisiting the Mutator Hypothesis.** Richard Fishel.

## Advances in Brief

- 7375 A Polymorphism in Endostatin, an Angiogenesis Inhibitor, Predisposes for the Development of Prostatic Adenocarcinoma.** Paula Inghebbi, Oscar Suzuki, Paulo H. C. Godoi, Venâncio Avancini Ferreira Alves, Andrea L. Serini, Todd Zorick, Fernando Sousa, Anamaría Camargo, Elson S. Moreira, Célio D. Loreto, Carlos Alberto Moreira-Filho, Antonio Sampaio, Gláucio Oliva, and Maria Rita Passos-Burns.

## Endocrinology

- 7122 Growth Inhibitory Effects of 1 $\alpha$ , 25-Dihydroxyvitamin D $_3$  Are Mediated by Increased Levels of p21 in the Prostatic Carcinoma Cell Line ALVLA-3L.** Kirsten A. Moffatt, Widya U. Johannes, Tammy E. Hollund, and Gary J. Miller.

## Epidemiology and Prevention

- 7130 Polymorphisms in Glutathione S-Transferases (*GSTM1* and *GSTT1*) and Survival after Treatment for Breast Cancer.** Christine B. Ambrosone, Carol Sweeney, Brian F. Coles, Patricia A. Thompson, Gail Y. McClure, Soheila Khorramian, Manal Y. Fares, Angie Stone, Fred F. Kalluhar, and Laura F. Hutchins.

- 7136 Dietary Folate Intake and Breast Cancer Risk: Results from the Shanghai Breast Cancer Study.** Martha J. Strubbe, Fan Jin, Qi Dai, Xiao-Ou Shu, John D. Potter, James R. Hebert, Yu-Tang Gao, and Wei Zheng.

## Experimental Therapeutics

- 7142 p202, an Interferon-inducible Protein, Mediates Multiple Antitumor Activities in Human Pancreatic Cancer Xenograft Models.** Yong Wen, Duen-Hua Yan, Baifang Wang, Bill Spohn, Yi Ding, Roping Shang, Yiyi Zou, Keping Xie, and Mien-Chie Hung.

- 7148 Induction of Apoptosis in 9-Nitrocamptothecin-treated DU145 Human Prostate Carcinoma Cells Correlates with de Novo Synthesis of CD95 and CD95 Ligand and Down-regulation of c-FLIP $\Delta$ 201.** Devasis Chatterjee, Ingo Schmitz, Andreas Krueger, Kam Young, Sabine Kirchhoff, Peter H. Kramer, Marcus E. Peter, James H. Wyche, and Panayiotis Pantazis.

- 7155 Pegylation of a Chlorin Polymer Conjugate Increases Tumor Targeting of Photosensitizer.** Michael R. Hamblin, Jaime L. Miller, Imran Rizvi, Bernhard Oetel, Edward V. Maytin, and Tayyaba Hasan.

- 7163 Enhanced Uptake of a Thermally Responsive Polyepoxide by Tumor Cells in Response to Its Hyperthermia-mediated Phase Transition.** Dazhen Raucher and Ashutosh Chilkoti.

- 7171 Antitumorigenic and Proapoptotic Activities of Methylphenanthroline in Vascular Endothelial Cells and Associated Effects on PI3K-AKT, ERK, JNK and p38 MAPK Signaling.** Zaisen Wang, Cheng Jiang, Howard Ganther, and Junxuan Lu.

- 7179 Differential Expression of Members of the Tumor Necrosis Factor- $\alpha$ -related Apoptosis-inducing Ligand Pathway in Prostate Cancer Cells.** Sapirya Sridhar, Afshan A. Ali, Yaqun Liang, M. Fahy El Eraby, Ronald W. Lewis, and M. Vijay Kumar.

- 7184 The Tyrosine Kinase Inhibitor ZD1839 ("Iressa") Inhibits HER2-driven Signaling and Suppresses the Growth of HER2-overexpressing Tumor Cells.** Mark M. Moasser, Andrea Basso, Steven D. Averbuch, and Neal Rosen.

- 7189 Potent Antitumor Activity and Improved Pharmacological Profile of ST1481, a Novel 7-substituted Camptothecin.** Michelangelo De Cesare, Grazia Pratesi, Paola Perigo, Nives Carenini, Stella Tinelli, Lucio Merlini, Sergio Penna, Claudio Pisanò, Ferdinando Bucci, Loreana Vesica, Silvia Pace, Francesca Capocasa, Paolo Cernatucci, and Franco Zamboni.

- 7196 The Characterization of Novel, Dual ErbB-2/EGFR, Tyrosine Kinase Inhibitors: Potential Therapy for Cancer.** David W. Rusnak, Karen Affleck, Stuart G. Cockrell, Colin Stubbfield, Robert Harris, Martin Page, Kathryn J. Smith, Stephen B. Gunter, Malcolm C. Carter, Robert J. Shaw, Amanda Jowett, Jeremy Stables, Peter Topley, Edward R. Wood, Perry S. Brignola, Sue H. Kadel, Bryan R. Reep, Robert J. Mullay, Krystal J. Alligood, Barry R. Keith, Renae M. Crosby, Doris M. Murray, W. Blaine Knight, Tona M. Gilmer, and Karen Lackey.

- 7204 Expression of CD26 and Its Associated Dipeptidyl Peptidase IV Enzyme Activity Enhances Sensitivity to Doxorubicin-induced Cell Cycle Arrest at the G $_2$ M Checkpoint.** Iygar Aytaç, François-Xavier Claret, Lina Ho, Kanayo Sato, Kei Ohnaka, Gordon B. Mills, Fernando Cabanillas, Chikao Morimoto, and Nam H. Dang.

- 7211 Involvement of CD63 $\alpha$  Phosphatase in Hep3B Hepatoma Cell Growth Inhibition Induced by Novel K Vitamin Analog.** Zhiqun Zhang, Eileen C. Southwick, Merfang Wang, Siddhartha Kar, Kathryn S. Ross, Craig S. Wilcox, John S. Lazo, and Brian I. Carr.

- 7217 Mechanisms of Uptake and Resistance to Toxicant, a Novel Deoxyribose Nucleoside Analogue, in Human Leukemic and Solid Tumor Cell Lines.** Henriette Goudreau, Marilyn L. Clarke, France Ouellet, Delores Mowles, Milada Selner, Annie Richard, Nola Lee, John R. Mackey, James D. Young, Jacques Jolivet, Ronald G. Lafrenière, and Carol E. Cass.

- 7225 Transport of Methotrexate (MTX) and Folate by Multidrug Resistance Protein (MRP) 3 and MRP1: Effect of Polyglutamylation on MTX Transport.** Hao Zeng, Zhe-Sheng Chen, Martin G. Belinsky, Philip A. Rea, and Gary D. Kruh.

## Immunology

- 7233 Absence of the Wild-type Allele Predicts Poor Prognosis in Adult de Novo Acute Myeloid Leukemia with Normal Cytogenetics and the Internal Tandem Duplication of *FLT3*: A Cancer and Leukemia Group B Study.** Susan P. Whittam, Kellie J. Archer, Lan Feng, Claudia Baldos, Brian Becknell, Brian D. Carlson, Andrew J. Carroll, Krzysztof Mrózek, James W. Vardiman, Stephen L. George, Jonathan E. Kolitz, Richard A. Larson, Clara D. Bloomfield, and Michael A. Caligiuri.

- 7240 Macrophages Orchestrate the Immune Response to Tumor Cell Death.** Michael J. Coughlin, Alan A. Melcher, Atique Ahmed, Marka R. Crittenden, David S. Riddle, Emmaonela Linardakis, Anja N. Ruchatz, Lisa M. Emilsson, and Emmanuel G. Vile.

## October 15, Number 20

- 7379 Absence of Msh2 Protein Expression Is Associated with Alteration in the *PHI1* Locus and Fht Protein Expression in Colorectal Carcinoma.** Masaki Mori, Koshi Minori, Takaki Masuda, Keiji Yoshinaga, Keishi Yamashita, Ayumi Matsuyama, and Hiroshi Inoue.

- 7383 A Novel Growth Suppressor Gene on Chromosome 17p13.3 with a High Frequency of Mutation in Human Hepatocellular Carcinoma.** Xintao Zhao, Jinjun Li, Yinghua He, Fei Lan, Lili Fu, Jianying Guo, Ruijiao Zhao, Yun Ye, Mei He, Wenming Cheng, Jianguo Chen, Lisheng Zhang, Nanwu Yang, Binghua Xu, Mengchao Wu, Dafang Wan, and Jun-ren Gu.

- 7388 Molecular Classification of Human Carcinomas by Use of Gene Expression Signatures.** Andrew I. Su, John B. Welsh, Lisa M. Sapiro, Suzanne C. Kim, Peter Dunnin, Hilman A. Petri, G. Schultz, Steven M. Powell, Christopher A. Moskaluk, Henry F. Frierson, Jr., and Garret M. Hampton.

## Molecular Biology and Genetics

- 7248 Biochemical Genetic Analysis of Indinavir Resistance in Human Leukemia.** Xuequn Helen Hua, David Gensin, Rick Gossio, Rommel Tawaz, Hsien Shih, Thomas J. Kipps, Dennis A. Carson, and Lorenzo M. Leon.

- 7255 Par-4 Drives Trafficking and Activation of Fas and Fasl to Induce Prostate Cancer Cell Apoptosis and Tumor Regression.** Mala Chakraborty, Shirley Guofang Qiu, Krishna Murthy Vasudevan, and Vivek M. Rangnekar.

- 7264 Second Primary or Recurrence? Comparative Patterns of p53 and K-ras Mutations Suggest that Serious Borderline Ovarian Tumors and Subsequent Serous Carcinomas Are Unrelated Tumors.** B. Hannah Orie, Monica Ailawadi, Cristiano Colitti, Michael G. Muto, Michael Deavers, Elvio G. Silva, Ross S. Berkowitz, Samuel C. Mok, and David M. Gershenson.

- 7268 Multipoint Imprinting Analysis Indicates a Common Precursor Cell for Gonadal and Nongonadal Pediatric Germ Cell Tumors.** Dominik T. Schneider, Amy E. Schuster, Michael K. Fritsch, Jie Hu, Thomas Olson, Stephen Lauer, Ulrich Göbel, Elizabeth J. Perlman, the Pediatric Oncology Group, and German Pediatric Germ Cell Tumor Study Group.

- 7277 Epigenetic Inactivation of the *RASSF1A* 3p21.3 Tumor Suppressor Gene in Both Clear Cell and Papillary Renal Cell Carcinoma.** Catherine Morrissey, Alonso Martinez, Margorita Zaryka, Angelo Agathangelou, Sofia Honorio, Dewi Ashtut, Neil V. Morgan, Holger Moch, Frances M. Richards, Takeshi Kohida, Masahiro Yan, Peter Schraml, Farida Latif, and Eamonn R. Maher.

## Tumor Biology

- 7282 Modulation of Angiogenesis and Tumorigenicity of Human Melanocyte Cells by Vascular Endothelial Growth Factor and Basic Fibroblast Growth Factor.** Ulrich Graesslin, Ulrich Rödel, Sonja Karpinski, Monika Jutz, Stathis Philippou, and Wolff Schmiegler.

- 7291 Dynamics of Niche Expression during Murine Prostate Development and Tumorigenesis.** Jianyong Shou, Sarajane Ross, Hartmut Koppen, Frederic J. de Sauvage, and Wei-Qiang Gao.

- 7298 Generation of Multiple Angiogenesis Inhibitors by Human Pancreatic Cancer.** Olivier Kaker, Shinya Ohtsuka, Jacqueline Buryak, Tomoko Komiyama, Christian M. Becker, Elke Gert Achilles, Carmen M. Barnes, Michael S. O'Reilly, Jada Folkman, and Steven R. Price-Shepherd.

- 7305 Expression of Cyclooxygenase-2 and Inducible Nitric Oxide Synthase in Human Ovarian Tumors and Tumor-associated Macrophages.** Alda H. Klump, Harry Hollema, Claudia Kemper, Ate G. J. van der Zee, Elisabeth G. E. de Vries, and Toos Daemen.

- 7310 Androgen Receptor Mediates the Reduced Tumor Growth, Enhanced Androgen Responsiveness, and Selected Target Gene Transactivation in a Human Prostate Cancer Cell Line.** Bekir Cinar, Kenneth S. Koenen, Magnus Edlund, Gail S. Prins, Haiyan E. Zhou, and Leland W. K. Chung.

- 7318 Insulin-like Growth Factor-1 Induces Survival and Growth of Biologically Early Melanoma Cells through Both the Mitogen-activated Protein Kinase and  $\beta$ -Catenin Pathways.** Kapuota Sanyamoorthy, Gang Li, Bhavesh Vaidya, Dapa Patel, and Meenhard Herlyn.

- 7325 Cables Enhance Cdk2 Tyrosine 15 Phosphorylation by Wee1, Inhibits Cell Growth, and Is Lost in Many Human Colon and Squamous Cancers.** Chin-Lee Wu, Sandra D. Kirley, Hua Xiao, Yanning Chang, Daniel C. Cheng, and Lawrence R. Zakerberg.

- 7333 Thioesterin Expression in Primary T-Cell Acute Lymphoblastic Leukemia and Its Therapeutic Implication.** Li-shao Shao, Mitchell B. Dicciani, Tetsuya Tanaka, Ruby Gribi, Alice L. Yu, Jeanette D. Pullen, Bruce M. Cammarl, and John Yu.

- 7339 Tumor Necrosis Factor-related Apoptosis-inducing Ligand-induced Apoptosis of Human Melanoma Is Regulated by Smad/DABLO Release from Mitochondria.** Xiu Dong Zhang, Xi Yi Zhang, Christian P. Gray, Tam Nguyen, and Peter Hershey.

- 7349 Effects of ras and von Hippel-Lindau (VHL) Gene Mutations on Hypoxia-inducible Factor (HIF)-1 $\alpha$ , HIF-2 $\alpha$ , and Vascular Endothelial Growth Factor Expression and Their Regulation by the Phosphatidylinositol 3-Kinase/Akt Signaling Pathway.** Christine Blancher, John W. Moore, Norman Robertson, and Adrian L. Harris.

- 7356 Expression of the Antiangiogenic Factor 14kDa hPRL in Human MCT116 Colon Cancer Cells Inhibits Tumor Growth in Rag $^{177/77}$  Mice.** Frank Bentzen, Ingrid Strøm, Jean-François Martini, Joseph Maril, and Richard Weiner.

## Letter to the Editor

- 7363 Correspondence re: Akaoka, H., et al., Molecular Anatomy of BCL6 Translocations Revealed by Long-Distance Polymerase Chain Reaction-based Assays.** Cancer Res., 60: 2335-2341, 2000. Izidore S. Losos, Yakop Jacobs, Michael L. Cleary, Ronald Levy. Reply: Takashi Akaoka and Hiroshi Ohno.

## 7365 Announcements

Future Annual Meetings of the American Association for Cancer Research  
AACR Special Conferences in Cancer Research  
Recent Death  
Calendar of Events

## 7367 Author Index

- 7394 Hypoxia-inducible Factor-1 $\alpha$  Is an Intricate Marker for Hypoxia in Cervical Cancer Xenografts.** Vojislav Vukovic, Hans Kristian Haugland, Trudey Nickle, Andrew J. Morrison, and David W. Hedley.

- 7399 DNA Polymerase  $\beta$  Mediates Protection of Mammalian Cells against Ganciclovir-induced Cytotoxicity and DNA Breakage.** Maja T. Tomacic, Rudolf Thust, Robert W. Sobol, and Bernd Kaina.

- 7404 Age and TP53 Mutation Frequency in Childhood Malignant Gliomas: Results in a Multi-institutional Cohort.** Ian F. Pollack, Sydney D. Finkelstein, Judith Bernstein, Emma L. Holmes, Ronald L. Hamilton, Allan J. Yates, Jonathan L. Finlay, and Richard Spotts, for the Children's Cancer Group.



- 7408 Tyrophenol AG825 Triggers p38 Mitogen-activated Protein Kinase-dependent Apoptosis in Androgen-independent Prostate Cancer Cells C4 and C4-2. Horacio Murillo, Lucy J. Schmidt, and Donald J. Tindall.
- 7413 IIA Inhibition of Radiation-induced NF- $\kappa$ B Activity through Suppression of IKK Activity and I $\kappa$ B Degradation, Independent of Akt Activation. Ruying Shao, Ying Mei Tsai, Kevin Wei, Ryan von Lindern, Yun-Hong Chen, Keishi Makino, and Ni-Chie Hung.
- 7417 Human Rad17 Is Phosphorylated upon DNA Damage and also Overexpressed in Primary Non-small Cell Lung Cancer Tissues. Xin Wang, Luo Wang, Matthew D. Callister, Joe B. Putnam, Li Mao, and Lei Li.
- 7422 Loss of Expression of the Metastasis Suppressor Gene KISS1 during Melanoma Progression and Its Association with LOH of Chromosome 6q16.3-q23. Fumiko Shirasaki, Minoru Takata, Naohito Hata, and Kazuhiko Takahara.
- 7426 The Phosphatidylinositol 3'-Kinase p85 Gene Is an Oncogene in Human Ovarian and Colon Tumors. Amanda J. Philp, Ian G. Campbell, Christine Lee, Elizabeth Vincan, Steven P. Rockman, Robert H. Whitehead, Robert J. S. Thomas, and Wayne A. Phillips.
- 7430 Functional Significance of XPD Polymorphic Variants: Attenuated Apoptosis in Human Lymphoblastoid Cells with the XPD 312 Asp/Asp Genotype. Hasan Seker, Dorota Bukiewicz, Elise D. Bowman, Marek Rusin, Mohammad Hedayati, Lawrence Grossman, and Curtis C. Harris.

## Regular Articles

## Carcinogenesis

- 7435 Inducible Expression of Transforming Growth Factor  $\beta$ 1 (TGF- $\beta$ 1) in Papillomas Causes Rapid Metastasis. Brian H. Weeks, Wei He, Krista L. Olson, and Xiao-Jing Wang.
- 7444 Oncogenic Stress Increases Frameshift Mutations in Human Colorectal Cancer Cells. Christoph Gasche, Christina L. Chang, Jennifer Rhee, Ajay Goel, and C. Richard Boland.
- 7449 2-Difluoromethylornithine and Dihydrodendrosterone Inhibit Mammary Tumor Progression but Not Mammary or Prostate Tumor Initiation in C3H/5N40 T-antigen Transgenic Mice. Jeffrey E. Green, Masaki Shihata, Eiko Shihata, Richard C. Mison, Miriam R. Arner, Gary Kellif, and Ronald Lubet.
- 7456 Estrogenic and Antiestrogenic Properties of Resveratrol in Mammary Tumor Models. Krishna P. L. Bhat, Daniel Lantvit, Konstantin Christov, Rajendra G. Mehta, Richard C. Moon, and John M. Pezzuto.

## Clinical Investigations

- 7464 A Phase I Trial of CV706, a Replication-competent, PSA Selective Oncolytic Adenovirus, for the Treatment of Locally Recurrent Prostate Cancer Following Radiation Therapy. Theodore L. DeWeese, Henk van der Poel, Shidong Li, Bahar Mikhael, Renee Drew, Marti Goeman, Ulrike Anger, Robert DeLong, Nicholas DeRube, Ronald Rodriguez, Thomas Haik, Hannelo M. DeMarzo, Steven Piantadosi, D. C. Yu, Yu Chen, Daniel R. Henderson, Michael A. Carducci, William G. Nelson, and Jonathan W. Simons.

## Epidemiology and Prevention

- 7473 Chemopreventive Property of a Soybean Protein (Lumasin) That Binds to Deacetylated Histones and Inhibits Acetylation. Alfredo F. Galvez, Na Chen, Janet Macias, and Ben O. de Lumen.
- 7479 Enhanced Sensitivity of Human Oral Carcinomas to Induction of Apoptosis by Selenium Compounds: Involvement of Mitogen-activated Protein Kinase and Fas Pathways. Aurnab Ghose, Janis Fleming, Karam El-Bayoumy, and Paul R. Harrison.
- 7488 The Effects of Catechol-O-Methyltransferase Inhibition on Estrogen Metabolite and Oxidative DNA Damage Levels in Estradiol-treated MCF-7 Cells. Jackie A. Lavigne, Julie E. Goodman, Tokum Fong, Shelly Odwin, Ping He, Dean W. Roberts, and James D. Yager.

## Experimental Therapeutics

- 7495 Photosensitization with Zinc (II) Phthalocyanine as a Switch in the Decision between Apoptosis and Necrosis. Clara Fabra, Giuliana Valgusa, Giovanni Miotto, Lara Borsetto, Giulio Jori, Spiridione Garbisa, and Elena Reddi.
- 7501 Low-dose Chemotherapy Combined with an Antiangiogenic Drug Reduces Human Glioma Growth in Vivo. Lorenzo Bello, Giorgio Carubba, Carlo Giannini, Valeria Lucini, Francesca Cerutti, Francesco Scaglione, Julien Landré, Mauro Pluderi, Giustino Tosi, Roberto Villani, Rona S. Carroll, Peter McL. Black, and Andrea Bricoli.

## Advances in Brief

- 7709 A Proapoptotic Peptide for the Treatment of Solid Tumors. Jeffrey C. Mai, Zhibao Mi, Seon-Hee Kim, Bobby Ng, and Paul D. Robbins.
- 7713 Identification of a  $\gamma$ -Tubulin-binding Domain in BRCA1. Li-Ching Hsu, Thao P. Doan, and Raymond L. White.
- 7719 Phenotypic Analysis of hMSH2 Mutations in Mouse Cells Carrying Human Chromosomes. Giancarlo Marra, Stefania D'Atri, Hai Van, Claudia Perrella, Elda Cammavé, Bert Vogelstein, and Josef Irwin.
- 7722 Up-Regulation of the Ectodermal-Neural Cortex 1 (ENC1) Gene, a Downstream Target of the  $\beta$ -Catenin/T-Cell Factor Complex, in Colorectal Carcinomas. Manabu Fujita, Yoichi Furukawa, Toshihiko Tsunoda, Toshihiro Tanaka, Michio Ogawa, and Yusuke Nakamura.
- 7727 Somatic Mutations in the DNA Damage-Response Genes ATR and CHK1 in Sporadic Stomach Tumors with Microsatellite Instability. Anna Menoyo, Hafid Alazouzi, Elia Esquin, Manuel Armengol, Hiroyuki Yamamoto, and Simó Schwartz, Jr.
- 7731 Prognostic Impacts of Cytogenetic Findings in Clear Cell Renal Cell Carcinoma: Gain of 5q31-qter Predicts a Distinct Clinical Phenotype with Favorable Prognosis. Bastian Guanaw, Wolfgang Huber, Meike Holtrup, Anja von Heydebreck, Thomas Effert, Annemarie Poustka, Rolf-Hermann Ringert, Gerhard Jäke, and Lutz F. Füzess.

- 7507 Preclinical Antitumor Activity of BMS-214662, a Highly Apoptotic and Novel Farnesyltransferase Inhibitor. William C. Rose, Francis Y. F. Lee, Craig R. Fairchild, Mark Lynch, Thomas Monticello, Robert A. Kramer, and Veeraswamy Manne.
- 7518 Inhibition of Growth, Invasion, and Metastasis of Human Pancreatic Carcinoma Cells by NK4 in an Orthotopic Mouse Model. Daisaku Tomioka, Naoki Maehara, Keiji Kuba, Kazuhiro Mizumoto, Masao Tanaka, Kunio Matsumoto, and Toshiyuki Nakamura.
- 7525 The Farnesyl Protein Transferase Inhibitor SCH66336 Is a Potent Inhibitor of MDR1 Protein-Dependent P-glycoprotein. Er-Jia Wang, Christopher N. Casciano, Robert P. Clement, and William W. Johnson.
- 7530 Combined Intratumoral Injection of Bone Marrow-derived Dendritic Cells and Systemic Chemotherapy to Treat Pre-existing Murine Tumors. Youzhi Tong, Wenru Song, and Ronald G. Crystal.
- 7536 Levels of Phospholipid Metabolites in Breast Cancer Cells Treated with Antimitotic Drugs: A  $^{31}$ P-Magnetic Resonance Spectroscopy Study. Marina Sterin, Jack S. Cohen, Yael Mardor, Elissa Berman, and Israel Ringel.
- 7544 Overexpressed Androgen Receptor Linked to p21WAF1 silencing May Be Responsible for Androgen Independence and Resistance to Apoptosis of a Prostate Cancer Cell Line. Long G. Wang, Liliana Owsowski, and Anna C. Ferrari.
- 7552 Cross-resistance to the Synthetic Retinoid ID347 in a Paclitaxel-resistant Human Ovarian Carcinoma Cell Line Is Dependent of the Overexpression of Retinoic Acid Receptor- $\gamma$ . Atul Kumar, Dianne R. Soprano, and Hemant K. Parekh.

## Immunology

- 7556 Recombinant CD40 Ligand Therapy Has Significant Antitumor Effects on CD40-positive Ovarian Tumor Xenografts Grown in SCID Mice and Demonstrates an Augmented Effect with Cisplatin. Sharad Ghumande, Bonnie L. Hylander, Ezzelign Ofazoglu, Shashikant Lee, William Fandow, and Elizabeth A. Repasky.
- 7563 Administration of Interleukin-12 Enhances the Therapeutic Efficacy of Dendritic Cell-based Tumor Vaccines in Human Hepatocellular Carcinoma. Tomohide Tatum, Tetsuo Takehara, Tatsuya Kanno, Takaya Miyagi, Noriyoshi Kuzushita, Yoshiko Sugimoto, Masahisa Imushi, Akiori Kasahara, Yutaka Sasaki, Masatsugu Hori, and Norio Hayashi.
- 7568 The Infection of Human Dendritic Cells with Recombinant Avipox Vectors Expressing a Costimulatory Molecule Transgene (CD80) to Enhance the Activation of Antigen-specific Cytolytic T-Cells. Kwong Y. Tsang, MingZhu Zhu, Jos Even, James Gully, Philip Arlen, and Jeffrey Schlom.
- 7577 Identification of Helper T-Cell Epitopes That Encompass or Lie Proximal to Cytotoxic T-Cell Epitopes in the gp100 Melanoma Tumor Antigen. Hiroya Kobayashi, Jun Lu, and Esteban Celis.

## Molecular Biology and Genetics

- 7585 Profiling of Cancer Cells Using Protein Microarrays: Discovery of Novel Radiation-regulated Proteins. Ann Sreemath, Mukesh K. Nyati, Sooryanarayana Varambally, Terrence R. Barrette, Debashis Ghosh, Theodore S. Lawrence, and Arul M. Chinnaiyan.
- 7594 Regulation of Human Telomerase Activity: Repression by Normal Chromosome 3 Abolishes Nuclear Telomerase Reverse Transcriptase Transcripts but Does Not Affect c-Myc Activity. Anne-Lyse Ducrest, Mario Amacker, Yves D. Mathieu, Andrew P. Cuthbert, Deborah A. Trott, Robert F. Newbold, Markus Nabolz, and Joachim Lingner.
- 7603 Hypoxia-induced Enrichment and Mutagenesis of Cells That Have Lost DNA Mismatch Repair. Akira Kondo, Roohangiz Safaei, Misako Mishima, Hannes Niedner, Xinjun Lin, and Stephen B. Howell.
- 7608 Spectrum of ATM Gene Mutations in a Hospital-based Series of Unselected Breast Cancer Patients. Thilo Dörk, Regina Bendix, Michael Bremer, Dirk Rades, Karin Klöpfer, Marion Niece, Britta Skarwan, Annette Hector, Paria Yamin, Diana Steinmann, Sabine Weise, Manfred Stuhmann, and Johann H. Karstens.
- 7616 Nontruncating APC Germ-line Mutations and Mismatch Repair Deficiency Play a Minor Role in APC Tumor-negative Polyposis. Karl Heinemann, Annick Thompson, Andreas Locher, Tamara Farfante, Eva Badier, Angela Wolf, Remy Meier, Klaus Walter, Peter Bauerfeind, Giancarlo Marra, Hansjakob Müller, Dorothea Foerster, and Zuzana Dobbie.
- 7623 Detection of Mitochondrial DNA Mutations in Primary Breast Cancer and Fine-Needle Aspirates. Paola Parrella, Yan Xiao, Makiko Fliis, Montserrat Sanchez-Céspedes, Paula Marzetti, Monica Rinaldi, Theresa Nicol, Edward Gabrielson, Carmela Cuomo, Daniel Cohen, Sami Pandit, Myla Spencer, Carla Rabbitti, Vito Michele Fazio, and David Sidransky.

## Regular Articles

## Biochemistry and Biophysics

- 7747 Quantitative  $T_1\rho$  Magnetic Resonance Imaging of RIF-1 Tumors in Vivo: Detection of Early Response to Cyclophosphamide Therapy. Umamaheswar Duvvuri, Harish Poptani, Michael Feldman, Lydie Nadal-Desbarats, Michael S. Gee, William M. F. Lee, Ravinder Reddy, John S. Leigh, and Jerry D. Gluckson.
- 7754 Polyamine Depletion in Human Melanoma Cells Leads to G<sub>1</sub> Arrest Associated with Induction of p21WAF1/CIP1. Changes in the Expression of p21-regulated Genes, and a Senescence-like Phenotype. Debora L. Kramer, Ben-Dit Chang, Ying Chen, Paula Diegelman, Kersti Ann, Adrian R. Black, Igor B. Romanov, and Carl W. Porter.

## Tumor Biology

- 7627 Structural Fragility of Blood Vessels and Peritoneum in Calpain II-deficient Mice, Resulting in an Increase in Hematogenous Metastasis and Peritoneal Dissemination of Malignant Tumor Cells. Shin'ichiro Taniguchi, Michiko Takeoka, Takashi Ehara, Shigenori Hashimoto, Hiroshi Shibuki, Nagahisa Yoshimura, Hidekazu Shigematsu, Katsuhito Takahashi, and Motoya Katsuki.
- 7635 Requirement for Mdm2 in the Survival Effects of Bcr-Abl and Interleukin 3 in Hematopoietic Cells. Alexander W. Goetz, Heiko van der Kuip, Ruth Mays, Moshe Oren, and Walter E. Aulic.
- 7642 HDMP1 Protein Overexpression, but not Gene Amplification, is Related to Tumorigenesis of Cutaneous Melanoma. David Polsky, Boris C. Bastian, Carole Hazan, Kate Melzer, Jason Pack, Alan Houghton, Klaus Busam, Carlos Cordon-Cardo, and Imran Osman.
- 7647 Akt1 Induces Extracellular Matrix Invasion and Matrix Metalloproteinase-2 Activity in Mouse Mammary Epithelial Cells. Bao-Kun Park, Xiao Zeng, and Robert I. Glazer.
- 7654 Mobilized Human CD34+ Hematopoietic Stem Cells Enhance Tumor Growth in a Nonobese Diabetic/Severe Combined Immuno-deficient Mouse Model of Human Non-Hodgkin's Lymphoma. Eveline S. J. M. de Bont, Jeroen E. J. Guikema, Frank Schepers, Tiny Meuwissen, Willem A. Kamps, Edo Veltenga, and Nico A. Boer.
- 7660 Neither p21WAF1 nor 14-3-3 $\sigma$  Prevents G<sub>2</sub> Progression to Mitosis in Human Colon Carcinoma Cells after DNA Damage, but p21WAF1 Induces Stable G<sub>1</sub> Arrest in Resulting Tetraploid Cells. Paul R. Andersen, Françoise B. Lacroix, Olivier D. Lohrer, and Robert L. Margolis.
- 7669 Continuous Administration of Endostatin by Intraperitoneally Implanted Osmotic Pump Improves the Efficacy and Potency of Therapy in a Mouse Xenograft Tumor Model. Oliver Kisker, Christian M. Becker, Daniela Prox, Michael Fannon, Robert D'Amato, Evelyn Flynn, William E. Fogler, B. Kim Lee, Simon, Elizabeth N. Allred, Steven R. Prie-Shepherd, and Judith Folkman.
- 7675 Phosphorylation of Retinoid X Receptor  $\alpha$  at Serine 260 Impairs Its Metabolic and Function in Human Hepatocellular Carcinoma. Rie Matsushima-Nishiwaki, Masataka Okuno, Seiji Adachi, Tetsuro Sano, Kuniharu Akita, Hisataka Moriwaki, Scott L. Friedman, and Soichi Kojima.
- 7683 Genetic Subgroups of Anaplastic Astrocytomas Correlate with Patient Age and Survival. Sandeep Kunwar, Gayatri Mohapatra, Andrew Bollen, Kathleen R. Lamborn, Michael Prados and Burt G. Feuerstein.
- 7689 Iodine-induced NF- $\kappa$ B Activation in HeLa Cells Occurs via a Mechanism Involving p38 MAP Kinase. C. Matthew Bradley, Stephanie Markovina, S. Jack Wei, Luis M. Rene, Imran Zoberi, Nobuo Horikoshi, and David Gius.

## Letters to the Editor

- 7697 Correspondence re: N. C. Denko and A. J. Giaccia, Tumor Hypoxia, the Physiological Link between Tumor's Hypoxia (Carcinoma-induced Coagulation) and Metastasis. Cancer Res., 61: 795-798, 2001. Georg-Friedrich von Tempelhoff, Lothar Heilmann, and Gerhard Hommel.
- 7699 Correspondence re: Y. Yamada et al., Frequent  $\beta$ -Catenin Gene Mutations and Accumulations of the Protein in the Putative Preneoplastic Lesions Lacking Macroscopic Aberrant Crypt Foci Appear, in Rat Colon Carcinogenesis. Cancer Res., 60: 3323-3327, 2000; and Sequential Analysis of Morphological and Biological Properties of  $\beta$ -Catenin-accumulated Crypts, Provable Premalignant Lesions Independent of Aberrant Crypt Foci in Rat Colon Carcinogenesis. Cancer Res., 61: 1874-1878, 2001. Theresa P. Pretlow and Ranjana P. Bird. Reply by Yasuhiro Yamada, Yoshinobu Hirose, Akira Hara, and Hideaki Mori.

## 7702 Announcements

Future Annual Meetings of the American Association for Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## 7703 Errata

K. Mishima et al., 61: 5349-5354, 2001.  
G. S. Prins et al., 61: 6089-6097, 2001.

## 7705 Correction

M. Jaival et al., 61: 6388-6393, 2001.

## 7706 Author Index

## November 1, Number 21

- 7739 The Presence of Single Nucleotide Instability in Human Breast Cancer Cell Lines. Naoko Watanabe, Eriko Okochi, Masataka Mochizuki, Takashi Sugimura, and Toshiyuki Ushijima.
- 7743 High Frequency of Low-Level Microsatellite Instability in Early Colorectal Cancer. Takeshi Kambura, Nagahide Matsubara, Hitoshi Nakagawa, Kenji Nishihara, Takeshi Nagasaka, Tadashi Yoshino, Hiroshi Iizaki, Gerald B. Sharp, Jeremy Jass, Kenji Shimizu, and Noriaki Tanaka.

- 7798 **The Role of *APMS1* and *APMS2* in Predisposing to Colorectal Cancer.** Tao Liu, Hai Yan, Shunon Kusumoto, Antonio Percepcio, Marie-Louise Biagard, Monica Pedroni, Piero Benatti, Kenneth W. Kinzler, Bert Vogelstein, Maurizio Ponz de Leon, Páivi Pelomäki, and Annika Lindholm.

- 7803 **Biological Impact of Natural COOH-Terminal Deletions of Hepatitis B Virus X Protein in Hepatocellular Carcinoma Tissues.** Hong Tu, Celestino Bonura, Carlo Giannini, Hélène Mouly, Patrick Sossan, Michael Kew, Patrizia Paterni-Brechot, Christian Brechot, and Dina Krensdorf.

### Clinical Investigations

- 7811 **Quantitative Expression of the Human *KLK19* Gene (*KLK9*) in Ovarian Cancer: A New Independent and Favorable Prognostic Marker.** George M. Yousef, Lianna G. Kyriakopoulou, Andreas Scoulas, Stefano Fracchioli, Bruno Ghiringhelli, Mayam Zaghloul, Albert Chang, Maria Diamandis, Giorgio Giardina, Warren J. Hartwick, Giovanni Richiardi, Marco Massobrio, Eleftherios P. Darnas, and Dionysios Katsaros.

### Epidemiology and Prevention

- 7819  **$\gamma$ -Radiation-Induced G2 Delay, Apoptosis, and p53 Response as Potential Susceptibility Markers For Lung Cancer.** Hua Zhao, Margaret R. Spitz, Gail E. Tomlinson, Huijing Zhang, John D. Minna, and Xifeng Wu.

- 7825 **A Single Nucleotide Polymorphism in the Matrix Metalloproteinase-1 Promoter Enhances Lung Cancer Susceptibility.** Yong Zhu, Margaret R. Spitz, Lei Lei, Gordon B. Mills, and Xifeng Wu.

### Experimental Therapeutics

- 7830 **Thrombospondin-1 Type 1 Repeat Recombinant Protein Inhibits Tumor Growth through Transforming Growth Factor- $\beta$ -dependent and -independent Mechanisms.** Wei-Min Miao, Wen Lin Song, Mark Duquette, Patrick Lawler, Christine Laus, and Jack Lawler.

- 7840 **sFlt-1 Gene-transfected Fibroblasts: A Wound-specific Gene Therapy Inhibits Local Cancer Recurrence.** Weigang Wang, Shigeki Arai, Akira Mori, Katsuyoshi Furumoto, Teizuo Nakano, Naoki Isobe, Toru Murata, Hisashi Onodera, and Masayuki Imamura.

- 7846 **Antiangiogenic Therapy of Established Tumors in Human Skin/Severe Combined Immunodeficiency Mouse Chimeras by Anti-Endoglin (CD105) Monoclonal Antibodies, and Synergy between Anti-Endoglin Antibody and Cyclophosphamide.** Norihiko Takahashi, Akihiro Haba, Fumihiko Matsuno, and Ben K. Seem.

- 7855 **Antisense-mediated Suppression of Human *Hepanase* Gene Expression Inhibits Plaque Dissection of Human Carotid Artery.** Futoshi Uno, Toshiyoshi Fujiwara, Yoshiko Takata, Shochiro Ohnishi, Koji Katsuda, Munenori Takahashi, Takamasa Okawa, Yoshio Naomoto, Motowo Nakajima, and Noriaki Tanaka.

- 7861 **Eradication of Established Tumors by Vaccination with Venezuelan Equine Encephalitis Virus Replicon Particles Delivering Human Papillomavirus 16 E7 RNA.** Markwin P. Velders, Sue McElhinney, Maria Cristina Casotti, Gretchen L. Eiben, Terry Higgins, Gerald R. Kovacs, Amir G. Elmishad, W. Martin Kast, and Larry R. Smith.

- 7868 **Therapeutic Efficacy of Aortic Administration of N-Acetylcysteine as a Chemoprotectant against Bone Marrow Toxicity after Intracarotid Administration of Abiraterone with or without Glutathione Depletion in a Rat Model.** Edward A. Newell, Michael A. Pagel, Brant P. Hasler, Thomas G. Deloughery, and Leslie L. Muldoon.

### Advances in Brief

- 8051 **Hydrogen Peroxide Mediates Activation of Nuclear Factor of Activated T Cells (NFAT) by Nickel Suboxide.** Chuanhui Huang, Jingxia Li, Max Costa, Zhao Zhang, Stephen S. Leonard, Vincent Custrone, Val Vallyathan, Gong Ju, and Xianglin Shi.

- 8058 **In Situ Expression of Interleukin-4 (IL-4) Receptors in Human Brain Tumors and Cytotoxicity of a Recombinant IL-4 Cytosine in Primary Glioblastoma Cell Cultures.** Bharat H. Joshi, Pamela Leland, Anthony Asher, Richard A. Prosser, Frederick Varnetto, and Raj K. Puri.

- 8062 **Destabilization of CHK2 by a Mitotic Mutation Associated with Li-Fraumeni Syndrome.** Sean Bing Lee, Sang Hyun Kim, Daphne W. Bell, Duke C. R. Walters, Taryn A. Schipps, Melissa M. Jurecz, Dennis C. Sgroi, Judy E. Garber, Frederick P. Li, Kim E. Nichols, Jenny M. Vazley, Andrew K. Godwin, Kristen M. Shannon, Ed Harlow, and Daniel A. Haber.

- 8068 **WFOH, the FRA16D Gene, Behaves as a Suppressor of Tumor Growth.** Andrej K. Bodnar, Catherine L. Keck-Waggoner, Rachael L. Daniel, Kendra J. Luffin, P. Leif Bergsagel, Kaoru Kiguchi, Andrew J. Brenner, and C. Marcelo Aldaz.

- 8074 **Cytoplasmic Localization of the Oncogenic Protein Ski in Human Cutaneous Melanomas in Vivo: Functional Implications for Transforming Growth Factor  $\beta$  Signaling.** Jon A. Reed, Elise Balas, Wendong Xu, Nihal A. Okan, Debata Bandyopadhyay, and Estela E. Medrano.

- 8079 **LYVE-1 Is Not Restricted to the Lymph Vessels: Expression in Normal Liver Blood Sinusoids and Down-Regulation in Human Liver Cancer and Cholangitis.** Carla Motta Carreira, Selim M. Nasser, Emmanuelle di Tomaso, Timothy P. Padra, Yves Bocher, Stanislas J. Tomare, and Rakesh K. Jain.

- 8085  **$\beta$ -Catenin Expression Is Altered in Human Colonic Aberrant Crypt Foci.** Xing Pei Hsu, Thomas G. Pretlow, J. Sunil Rao, and Theresa P. Pretlow.

- 8089 **Expression of the Invasion Factor Laminin  $\gamma 2$  in Colorectal Carcinomas Is Regulated by  $\beta$ -Catenin.** Falk Hübner, Andreas Jung, Nicole Kotz, Thomas Kirchler, and Thomas Brabletz.

- 8094 **Hypermethylation in Human Cancers of the *RIZ1* Tumor Suppressor Gene, a Member of a Histone/Protein Methyltransferase Superfamily.** Yong Du, Tobias Carling, Wei Fang, Zhe Piao, Jin-Chuan Sheu, and Shi Huang.

- 8100 **Mining the Melanosome for Tumor Vaccine Targets: Polypeptide Is a Novel Tumor-associated Antigen.** Christopher E. Teeluckan, Wolfgang W. Leitner, Paul F. Robbins, Steven A. Rosenberg, and Nicholas P. Restifo.

- 8105 **Comparative Analysis of Necrotic and Apoptotic Tumor Cells as a Source of Antigens in Dendritic Cell-based Immunization.** Yoshiko Kotera, Koichi Shimizu, and James J. Moll.

- 7875 **Prevention and Inhibition of Nasopharyngeal Carcinoma Growth by Anti-viral Phosphonated Nucleoside Analogs.** Shigeyuki Munro, Nancy Raab-Traub, and Joseph S. Pagano.

- 7878 **Expression of *Claudin-3* and *Claudin-4* in Prostate Cancer Epithelium.** Haiyan Long, Colin D. Crean, Wei-Hua Lee, O. William Cummings, and Theodore G. Gabig.

- 7882 **A Midline Promoter-based Conditionally Replicative Adenovirus for Treatment of Pediatric Solid Tumors and Bone Marrow Tumor Purging.** Yasuo Adachi, Paul N. Reynolds, Masato Yamamoto, Minghui Wang, Koichi Takayama, Shuichi Matsubara, Takashi Muramatsu, and David T. Curie.

### Immunology

- 7889 **Evidence for an Antigen-driven Humoral Immune Response in Medullary Ductal Breast Cancer.** J. A. Coronella, P. Tellemann, G. A. Kingsbury, T. D. Truong, S. Hays, and R. P. Janghans.

- 7900 **Tumor Antigens Isolated from a Patient with Vitiligo and T-Cell-Infiltrated Melanoma.** Yukiko Kiriwa, Tomomitsu Fujita, Masanori Akada, Keiichi Ito, Tomoko Shofuda, Yuriko Suzuki, Akifumi Yamamoto, Toshiaki Saida, and Yutaka Kawakami.

- 7908 **Proteomics-based Identification of Protein Gene Product 9.5 as a Tumor Antigen That Induces a Humoral Immune Response in Lung Cancer.** Franck Brichory, David Beer, Francois Le Naour, Thomas Giordano, and Samir Hansh.

- 7913 **Efficient Antigen Gene Transduction Using Arg-Gly-Asp-Fc-Mutant Adenovirus Vectors Can Potentiate Antitumor Vaccine Efficacy and Maturation of Murine Dendritic Cells.** Naoki Okada, Tomomi Saito, Yasuhiko Masunaga, Yukiko Tsukada, Shinsuke Nakagawa, Hiroyuki Mizuguchi, Kohei Mori, Yuka Okada, Takuya Fujita, Takao Hayakawa, Takanori Mayumi, and Akira Yamamoto.

- 7920 **Immunization against Endogenous Retroviral Tumor-associated Antigens.** Michael H. Kershaw, Cary Hsu, Wallace Mendez, Libbie L. Parker, Gang Wang, Willem W. Overwijk, Rejane Lapante, James C. Yang, Ronald F. Wang, Nicholas P. Restifo, and Patrick Hwu.

### Molecular Biology and Genetics

- 7925 **Induction of G2S0-targeted and T-Cell-mediated Antitumor Activity against Renal Cell Carcinoma Using a Chimeric Fusion Protein Consisting of G2S0 and Granulocyte/Monocyte-Colony Stimulating Factor.** Cho-Lea Tso, Annon Zisman, Allan Pantuck, Robert Callaway, Jose M. Hernandez, San Paik, David Nguyen, Barbara Giltz, Peter I. Shintaku, Jean de Krom, Robert Figlin, and Anne Ballegrin.

- 7934 **The Distinct Spectra of Tumor-associated Ape Mutations in Mismatch Repair-deficient *hMLH1* Mice Define the Roles of MSH3 and MSH6 in DNA Repair and Intestinal Tumorigenesis.** Mari Kurauchi, Kan Yang, Edmund Wong, Elena Avdeyev, Kaituo Fan, Richard D. Kolodner, Martin Lipkin, Anthony M. C. Brown, Raju Kuchelapati, and Winfried Edelmann.

- 7943 **Inactivation of Human *SRBC*, Located within the 11p15.5-p15.4 Tumor Suppressor Region, in Breast and Lung Cancers.** Xie L., Xu, Leijun C. Wu, Fenghe Du, Arthur Davis, Michael Peyton, Yoshio Tomizawa, Anubhav Mahtia, Gail Tomlinson, Adi F. Gazdar, Bernard E. Weissman, Anne M. Bowcock, Richard Baer, and John D. Minna.

- 7950 **Accumulation of Losses of Heterozygosity and Multistep Carcinogenesis in Pulmonary Adenocarcinoma.** Yanyuqi Aoyagi, Tomoyuki Yokote, Yoko Minami, Atsushi Ochiai, Tatsuo Iijima, Yukio Morishita, Tatsuya Oda, Katsuki Fukao, and Masayoshi Noguchi.

## November 15, Number 22

- 8110 **Modulation of the Immune Response by Systemic Targeting of Antigens to Lymph Nodes.** Martin Trepp, Wadiah Arar, and Renata Pasqualini.

- 8113 ***O<sup>6</sup>*-Methylguanine-DNA Methyltransferase Promotes Hypermethylation Shifts the p53 Mutational Spectrum in Non-Small Cell Lung Cancer.** Patrick Wolf, Ying Chuan Hu, Kara Doffek, David Sidransky, and Steven A. Ahrendt.

- 8118 **KIT Activation Is a Ubiquitous Feature of Gastrointestinal Stromal Tumors.** Brian P. Rubin, Samuel Singer, Connie Tsao, Anette Duensing, Marcia L. Lux, Robert Ruiz, Michele K. Hibbard, Chang-Jie Chen, Sheng Xiao, David A. Tuveson, George D. Demetri, Christopher D. M. Fletcher, and Jonathan A. Fletcher.

- 8122 **T-Cell Receptor  $\gamma$  Chain Alternate Reading Frame Protein (TARF) Expression in Prostate Cancer Cells Leads to an Increased Growth Rate and Induction of Carcinomas and Apoptosis.** Curt D. Wolfgang, Magnus Essand, Byungkook Lee, and Ira Pastan.

### Regular Articles

#### Carcinogenesis

- 8127 **Induction of Antitumor Immunity via Intratumoral Tetra-Stimulator Protein Transfer.** Guoxing Zhang, Aoshuang Chen, Raymond E. Stener, Paul J. Zhang, Tao Pan, Nadya Kiyatkin, and Mark L. Tykocinski.

- 8135 **Malignant Transformation in a Nontumorigenic Human Prostatic Epithelial Cell Line.** Simon W. Hayward, Yuzhou Wang, Mei Cao, Yun Kit Hom, Baohui Zhang, Gary D. Grossfeld, Daniel Sadlosky, Gerald R. Cunha.

- 8143 **The Consequences of Chromosomal Aneuploidy on Gene Expression Profiles in a Cell Line Model for Prostate Carcinogenesis.** John L. Phillips, Simon W. Hayward, Yuzhou Wang, James Vaselli, Christian Pavlovich, Hesh Padilla-Nash, John R. Peralta, B. Michael Ghadimi, Gary D. Grossfeld, Alexandra Rivera, W. Marston Linehan, Gerald R. Cunha, and Thomas Ried.

- 8150 **Induction of Melanoma in Murine Macrophage Inflammatory Protein 2 Transgenic Mice Heterozygous for Inhibitor of Kinase/Alternate Reading Frame.** Jinning Yang, Jing Lian, Yingchun Yu, Cui Li, Ronald A. DePinho, Lynda Chin, and Ann Richmond.

- 8158 **UV-induced DNA Damage and Mutations in Hupki (Human p53 Knock-in) Mice Recapitulate p53 Hotspot Alterations in Sun-exposed Human Skin.** Jun Li, Luo, Wei-Min Tong, Jung-Hoon Yoo, Manfred Herzigshagen, Rita Knecht, Qun Yang, Dominique Galsens, Gerd P. Pfleider, Zhao-Qi Wang, and Monica Holst.

- 7955 **Absence of Genetic Abnormalities in Fibroadenomas of the Breast Determined at p53 Gene Mutations and Microsatellite Alterations.** Norihiro Sany-Felix Picard, Florence Mege, Laurent Amould, and Sarah Lizard-Nacol.

### Tumor Biology

- 7959 **Activation of Melanoma Antigen Tumor Antigens Occurs Early in Lung Carcinogenesis.** Se J. Jang, Jean-Charles Soria, Luo Wang, Khaleel A. Hassan, Rodolfo C. Morice, Garrett L. Walsh, Wan Ki Hong, and Li Mao.

- 7964 **Urea as a Recovery Marker for Quantitative Assessment of Tumor Interstitial Solutes with Microdialysis.** Susan N. Eninger, Christine C. Pottmann, Natalie A. Wisniewski, Amanda A. Gaskin, Jennifer S. Shoemaker, Jean M. Poulsen, Mark D. Dewhirst, and Bruce Klitzman.

- 7971 **Fluoresceinylated Improves Imaging of Human Glioblastoma Xenografts with Radiolabeled Iododeoxyribose.** Yves M. Dupuis, Maria Vazquez, Jean-Pierre Mach, Nicolas De Tribolet, Claude Dagher, Daniel O. Sloan, and Franz Buchegger.

- 7978 **Human APC2 Localization and Allelic Imbalance.** Christy Rothwell Jarrett, Jan Blomquist, Tin Cao, D. S. Bessette, M. Cepeda, Paul E. Young, C. Richter King, and Stephen W. Byers.

- 7985 **Expression of Dominant-negative Form of Ets-1 Suppresses Fibroblast-stimulated Cell Adhesion and Migration through Down-regulation of Integrin  $\alpha 5$  Expression in U251 Glioma Cell Line.** Daisuke Kito, Takahisa Takino, Mitsutoshi Nakada, Tomoya Takahashi, Junkoh Yamashita, and Hiroshi Sato.

- 7992 **Expression of Hypoxia-inducible Carbonic Anhydrase-9 Relates to Angiogenic Pathways and Independently to Poor Outcome in Non-Small Cell Lung Cancer.** Alexandra Giromanaki, Michael I. Koukourakis, Efthymos Svoridis, Janine Pastorek, Charles C. Wykoff, Kevin C. Gatter, and Adrian L. Harris.

- 7999 **Diminished Expression of S100A2, a Putative Tumor Suppressor, at Early Stage of Human Lung Carcinogenesis.** Gang Feng, Xiao-chun Xu, Emile M. Yousef, and Reuben Lotan.

- 8005 **Direct Relation between BCR-ABL Tyrosine Kinase Activity and Cyclin D2 Expression in Lymphoblasts.** Michael W. N. Deininger, Sara A. D. Vieira, Yelena Parada, Lolita Banerji, Eric W. F. Lane, Gordon Peters, François Mahon, Thomas Kohler, John M. Goldman, and Junia V. Melo.

- 8014 **Cyt Methylation as a Basis for Breast Tumor-specific Loss of NESU/Kallikrein 10 Expression.** Bao Li, Jaya Goyal, Sanjay Dhar, Gerbenhar Dimri, Ella Evron, Sarawati Sukumar, David E. Wazer, and Vimal Dhar.

- 8022 **Altered Gene Expression Pattern in Cultured Human Breast Cancer Cells Treated with Hepatocyte Growth Factor/Scatter Factor in the Setting of DNA Damage.** Ren-qi Yuan, Sajjan Fan, Mohan Achary, Donn M. Stewart, Itzhak D. Goldberg, and Eliot M. Rosen.

### 8032 Announcements

Future Annual Meetings of the American Association for Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

### 8033 Employment Register

### 8049 Author Index

- 8164 **A New Selective and Potent Inhibitor of Human Cytochrome P450 1B1 and Its Application to Antitumorigenicity.** Young-Jin Chun, Sanghe Kim, Donghak Kim, Sang-Kwang Lee, and F. Peter Guenther.

### Experimental Therapeutics

- 8171 **Inhibition of Angiogenesis-driven Kaposi's Sarcoma Tumor Growth in Nude Mice by Oral N-Acetylcysteine.** Adriana Albini, Monica Morini, Francesco D'Agostini, Nicoletta Ferrari, Francesco Campelli, Giuseppe Arena, Douglas M. Noonan, Carlo Pesce, and Silvio De Flora.

- 8179 **Quantitative Imaging and Microlocalization of Boron-10 in Brain Tumors and Infiltrating Tumor Cells by SIMS Ion Microscopy: Relevance to Neutron Capture Therapy.** Duane R. Smith, Subhash Chandra, Rolf F. Barth, Weilian Yang, Darrel D. Joel, and Jeffrey A. Coderre.

- 8188 **A Genetically Engineered Influenza A Virus with *non*-Dependent Oncolytic Properties.** Michael Bergmann, Ingrid Romer, Monika Sachet, Reinhard Fleischacker, Adolfo Garcia-Sastre, Peter Palese, Klaus Wolff, Hubert Pehamberger, Raimund Jakesz, and Thomas Muster.

- 8194 **Molecular Basis for the Synergistic Interaction of Adriamycin with the Formyldehydro-releasing Prodrug *Formyldehydro-methyl Butyrate* (AN-9).** Suzanne M. Cuts, Ada Repshel, Abraham Nudelman, Inesa Hmelitsky, and Don R. Phillips.

- 8203 **The Phosphatidylinositol 3-Kinase/Akt Survival Pathway Is a Target for the Anticancer and Radiosensitizing Agent PKC412, an Inhibitor of Protein Kinase C.** Angela Tenzer, Daniel Zingg, Sofia Rocha, Brian Hemmings, Doriano Fabbro, Christoph Glanzmann, P. August Schuchiger, Stephan Biss, and Martin Prossch.

- 8211 **Radiosensitization of p53 Mutant Cells by PD0166285, a Novel G2 Checkpoint Abrogator.** Yuli Wang, Jun Li, Robert N. Boer, Alan Kraker, Theodore Lawrence, Wilbur R. Leopold, and Yi Sun.

### Immunology

- 8218 **Phases of Apoptosis of Melanoma Cells, but not of Normal Melanocytes, Differently Affect Maturation of Myeloid Dendritic Cells.** Gabriella Pietra, Roberto Mortarini, Giorgio Parmiani, and Andrea Amici.

- 8227 **Immunization with Wild-Type p53 Gene Sequences Coadministered with Fl3 Ligand Induces an Antigen-specific Type 1 T-Cell Response.** Prabhakar Parag, Vladimir Pissarev, Jennifer Sabler, Amy Steffel, Michelle Vargis, Rakesh Singh, Drake LaFave, and James E. Talmadge.

## Molecular Biology and Genetics

- 8235 New Amplified and Highly Expressed Genes Discovered in the *ERBB2* Amplicon in Breast Cancer by cDNA Microarrays. Päivikki Kauranen, Maart Bärland, Outi Monni, and Anne Kallioniemi.
- 8241 Identification of Cytogenetic Subgroups and Karyotypic Pathways in Transitional Cell Carcinoma. Mattias Haglund, Torbjörn Sjö, Sverre Heim, Felix Mielman, Nils Mandahl, and Ingrid Fadl-Elimu.
- 8247 Diverse Mechanisms of  $\beta$ -Catenin Deregulation in Ovarian Endometrioid Adenocarcinomas. Rong Wu, Yali Zhai, Eric R. Fearon, and Kathleen R. Cho.
- 8256 p53R2-dependent Pathway for DNA Synthesis in a p53-regulated Cell Cycle Checkpoint. Tatsuya Yamaguchi, Koichi Matsuda, Yoji Sagaya, Manabu Iwadate, Masayuki A. Fujino, Yusuke Nakamura, and Hirofumi Arakawa.
- 8263 Independent Amplification of Two Gene Clusters on Chromosome 4 in Rat Endometrial Cancer: Identification and Molecular Characterization. Anna Walentinsson, Khalil Helou, Ville Wallenius, Hans J. Hedrich, Claude Sapiro, and Göran Lewné.
- 8274 Intrachromosomal Genomic Instability in Human Sporadic Colorectal Cancer Measured by Genome-Wide Allelotyping and Inter-Simple Sequence Repeat PCR. Garth R. Anderson, Bruce M. Brenner, Helen Swede, Neng Chen, W. Michael Hines, Jeffrey M. Conroy, Matthew J. Karpenko, Jean-Pierre Issa, Jeremy D. Bartos, Joslyn K. Brunelle, Gerald P. Jarems, Morton S. Kahlenberg, Mark Basik, Sheila Sait, Miguel A. Rodriguez-Bigas, Norma J. Nowak, Nicholas J. Perrelli, Thomas B. Shows, and Daniel L. Stoler.
- 8284 *p16<sup>INK4a</sup>* Lesions Are Common, Early Abnormalities that Undergo Clonal Expansion in Barrett's Metaplastic Epithelium. David J. Wong, Thomas G. Paulson, Laura J. Prevost, Patricia C. Galipeau, Gary Longton, Patricia L. Blount, and Brian J. Reid.

## Advances in Brief

- 8357 Suppression of Intestinal Polyposis in *Apc<sup>Min/+</sup>* Mice by Inhibiting Nitric Oxide Production. Byeongsu Ahn and Hiroshi Oshima.
- 8361 Heat Shock and Heat Shock Protein 70 Enhance the Oncolytic Effect of Replicative Adenovirus. Yosef S. David, Jerry L. Blackwell, Hui Li, Minghui Wang, Xiaohong Li, and David T. Carlet.
- 8366 Equivalent Induction of Telomerase-specific Cytotoxic T Lymphocytes from Tumor-bearing Patients and Healthy Individuals. Robert H. Vonderheide, Joachim L. Schultze, Karen S. Anderson, Britta MacKer, Marcia O. Butler, Zhihua Xia, Marcello J. Kurita, Michael S. von Bergswald, Michelle M. Bedor, Kara M. Hoar, Deborah R. Schnipper, Mary W. Brooks, Norman L. Letvin, Katherine F. Stephens, Kai W. Wucherpfennig, William C. Hahn, and Lee M. Nadler.
- 8371 Fusion of ETV6 to Fibroblast Growth Factor Receptor 3 in Peripheral T-Cell Lymphoma with a t(4;12)(p16;p13) Chromosomal Translocation. Fumiharu Yagasaki, Daisuke Wako, Yasuko Yokoyama, Yumiko Uchida, Ikuo Murohoshi, Hidekazu Kayano, Masafumi Taniwaki, Akira Matsuda, and Masami Besho.
- 8375 Dissociating Complex Epigenetic Alterations in Breast Cancer Using CpG Island Microarrays. Pearly S. Yan, Chuan-Mu Chen, Huidong Shi, Faruq Rahman, Susan H. Wei, Charles W. Caldwell, and Tim Hui-Ming Hung.
- 8381 Decreased Expression of DNA-dependent Protein Kinase, a DNA Repair Protein, during Human Colon Carcinogenesis. Basil Rigas, Simona Borgo, Abdelmonem Elbissony, Vassilios Baltas, Zsuzsanna Manika, Hiromi Shinya, Norio Kurihara, Mae Go, and Martin Lipkin.
- 8385 Decreased Focal Adhesion Kinase Suppresses Papilloma Formation during Experimental Mouse Skin Carcinogenesis. Gordon W. McLean, Ben Brown, Margaret I. Arbutkne, Anne W. Wyke, Timo Pikkari, Erkki Rönkä, and Margaret C. Frame.
- 8390 Akt Activation by Estrogen in Estrogen Receptor-negative Breast Cancer Cells. Eung-Mei Tsai, Shao-Chan Wang, Jan-Nan Lee, and Mien-Chih Hung.
- 8393 Germ-line *HER-2* Variant and Breast Cancer Risk by Stage of Disease. Robert McKean-Cowdin, Laurence N. Kolonel, Michael F. Press, Malcolm C. Pike, and Brian E. Henderson.
- 8395 Inactivation of the Retinoblastoma Tumor Suppressor Induces Apoptosis Protease-activated Factor-1 Dependent and Independent Apoptotic Pathways during Embryogenesis. Zhong Guo, Shi Yikang, Hiroki Yoshida, Tak W. Mak, and Eldad Zacksenhaus.
- 8401 Frequent  $\beta$ -Catenin Mutation and Cytoplasmic/Nuclear Accumulation in Pancreatic Solid-Pseudopapillary Neoplasm. Yukichi Tanaka, Keisuke Kato, Kenji Notohara, Hiroshi Hipo, Rieko Ijiri, Tsutsumi Miyake, Noriyuki Nagahara, Fumitaka Sasaki, Norihiko Kitagawa, Yukio Nakatani, and Yasutsugu Kobayashi.
- 8405 Microsatellite Mutation Rates Are Equivalent in Normal and Telomerase-immortalized Human Fibroblasts. Carmen N. Rosques, Jayne C. Boyer, and Rosann A. Farber.
- 8408 Computer Modeling Implicates Stem Cell Overproduction in Colon Cancer Initiation. Bruce M. Boman, Jeremy Z. Fields, Oliver Bothen-Carter, and Olaf A. Rungquist.
- 8412 Arzoxifene, a New Selective Estrogen Receptor Modulator for Chemoprevention of Experimental Breast Cancer. Nanjoo Suh, Andrew L. Glasbeek, Alan D. Pinkowitz, Henry U. Bryant, Loris L. Barris, James J. Starling, Homer L. Pearce, Charlotte Williams, Christopher Peer, Yongxing Wang, and Michael B. Sporn.

## Regular Articles

## Biochemistry and Biophysics

- 8416 The Constitutive Photomorphogenesis 9 Signalingosome Directs Vascular Endothelial Growth Factor Production in Tumor Cells. Christian Pollmann, Xiaohua Huang, Julian Mall, Dawadachgar Tech-Oschir, Michael Naumann, and Wolfgang Dabiel.

- 8290 Loss of DNA Mismatch Repair Imparts Defective cdc2 Signaling and G2 Arrest Responses without Altering Survival after Ionizing Radiation. Tao Yan, Jane E. Schupp, Hwa-shin Hwang, Mark W. Wagner, Suzanne E. Berry, Sue Strickfaden, Martina L. Veigl, W. David Sedwick, David A. Boothman, and Timothy J. Kinella.

## Tumor Biology

- 8298 Transgenic Polyoma Middle-T Mice Model Premalignant Mammary Disease. Jeannie E. Magliore, Drew Moghakar, Lawrence J. T. Young, Cathryn K. Manner, Lesley G. Ellis, Sasha O. Joseph, Benjamin Nicholson, Robert D. Cardiff, and Carol L. MacLeod.
- 8306 Transforming Growth Factor- $\beta$  Increases Survival of Human Melanoma through Sirtin Remodeling. Carola Berking, Michelle Takemoto, Helmut Schader, Louise Shown, Kapuettu Satyamoorthy, Paul Robbins, and Meenhard Herlyn.
- 8317 Increased p53 Mutation Frequency during Tumor Progression—Results from a Breast Cancer Cohort. Torbjörn Norberg, Sigrid Klau, Gunilla Kärf, Hans Nordgren, Lars Holmberg, and Jonas Bergh.
- 8322 Induction of Glucose-regulated Protein 78 by Chronic Hypoxia in Human Gastric Tumor Cells through a Protein Kinase C- $\alpha$ /ERK/AP-1 Signaling Cascade. Min Sop Song, Young Keun Park, Je-Ho Lee, and Kyungsoung Park.
- 8331 Heterogeneous Translational Growth Factor (TGF- $\beta$ ) Unresponsiveness and Loss of TGF- $\beta$  Receptor Type II Expression Caused by Histone Deacetylation in Lung Cancer Cell Lines. Hirotsuka Osada, Yoshio Tatematsu, Akira Masuda, Toshiko Saito, Miyabi Sugiyama, Kiyoshi Yanagisawa, and Takashi Takahashi.

## December 1, Number 23

- 8422 Doxorubicin Irreversibly Inactivates Iron Regulatory Proteins 1 and 2 in Cardiac myocytes: Evidence for Distinct Metabolic Pathways and Implications for Iron-mediated Cardiotoxicity of Antitumor Therapy. Giorgio Minotti, Raffaella Ronchi, Emanuela Salvatorelli, Pierantonio Menna, and Gaetano Cairo.

## Carcinogenesis

- 8429 Fatty Acid CoA Ligase 4 Is Up-regulated in Colon Adenocarcinoma. Yang Cao, Kavita B. Dave, Thao P. Doan, and Stephen M. Prescott.
- 8435 Differential Effects of CYP2E1 Status on the Metabolic Activation of the Colon Carcinogens Azoxymethane and Methylazoxymethanol. Ock Soon Sohn, Emerich S. Fiala, Silvia P. Requejo, John H. Weisburger, and Frank J. Gonzalez.

## Clinical Investigations

- 8441 A New Noninvasive Approach in Breast Cancer Therapy Using Magnetic Resonance Imaging-guided Focused Ultrasound Surgery. Peter E. Huber, Juergen W. Jenne, Ralf Rastler, Ioannis Simionatos, Hans-Peter Sinn, Hans-Joachim Stenttmann, Dietrich von Fourme, Michael F. Wannenmacher, and Juergen Debus.
- 8448 Abnormal Expression of 17 $\beta$ -Hydroxysteroid Dehydrogenases in Breast Cancer Predicts Late Recurrence. Cecilia Gunnarsson, Birgit M. Olsson, Olie Still, and Members of the Southeast Sweden Breast Cancer Group.

## Endocrinology

- 8452 HER-2 Amplification Impedes the Antiproliferative Effects of Hormone Therapy in Estrogen Receptor-positive Primary Breast Cancer. Mitch Dowsett, Catherine Harper-Wynne, Irene Boeddinghaus, Janine Salter, Margaret Hills, Mike Dixon, Steve Ebbs, Gerald Gird, Nigel Sacks, and Ian Smith.

## Epidemiology and Prevention

- 8459 Serologic Evidence of Herpes Simplex Virus 1 Infection and Oropharyngeal Cancer Risk. Jacqueline R. Starr, Janet R. Daling, E. Dawn Fitzgibbons, Margaret M. Madeleine, Rhonda S. Daniel, A. Galloway, and Stephen M. Schwartz.
- 8465 Sensitivity to Benz(a)pyrene Diol-Epoide Associated with Risk of Breast Cancer in Young Women and Modulation by Glutathione S-Transferase Polymorphisms: A Case-Control Study. Ping Xiong, Melissa L. Bondy, Donghui Li, Hongbing Shen, Li-E Wang, S. Eva Singletary, Margaret R. Spitz, and Qingyi Wei.

## Experimental Therapeutics

- 8470 RNA Replicase Derived from Poliovirus Are Directly Oncolytic for Human Tumor Cells of Diverse Origins. David C. Amadio, Donna C. Porter, Cheryl A. Jackson, G. Yancy Gillespie, and Casey D. Morrow.
- 8480 Inhibition of Angiogenesis and Metastasis in Two Murine Models by the Matrix Metalloproteinase Inhibitor, BMS-275291. Joseph G. Naglich, Maria Jure-Kunkel, Elora Gupta, Joseph Fargnoli, Artis J. Henderson, Anne C. Lewin, Randy Talbot, Andy Baxter, John Reid, Ranjan Savopoulos, Ruth Wells, Robert A. Kramer, and Pamela A. Trail.
- 8486 Antisense Oligodeoxynucleotide Targeted to Midkine, a Heparin-binding Growth Factor, Suppresses Tumorigenicity of Mouse Rectal Carcinoma Cells. Yoshifumi Takei, Kenji Kadomatsu, Seichi Matsuo, Hiroshi Itoh, Kunihiko Nakazawa, Shunichiro Kubota, and Takashi Muramatsu.
- 8492 The Histone Deacetylase Inhibitor Suberoylanilic Hydroxamic Acid Induces Differentiation of Human Breast Cancer Cells. Pamela N. Munster, Tiffany Trono-Sandval, Neal Rosen, Richard Rifkind, Paul A. Marks, and Victoria M. Richon.

- 8498 MIG (CXCL9) Chemokine Gene Therapy Combines with Antibody-Cytokine Fusion Protein to Suppress Growth and Dissemination of Murine Colon Carcinoma. J. Michael Rushmore, Rong Xiang, Andreas G. Niehman, Yi Ba, Ursula Petri, Carrie S. Dolman, Stephen D. Gilles, and Ralph A. Reisfeld.

- 8504 Retinoid-related Molecules Induce Cytochrome c Release and Apoptosis through Activation of c-Jun N-Terminal Kinase/p38 Mitogen-activated Protein Kinases. Maria A. Ortiz, Francisco J. Lopez-Hernandez, Yolanda Bayon, Magnus Pfahl, and F. Javier Pedraza.

- 8340 Endothelin-1 Induces Tumor Proteinase Activation and Invasiveness of Ovarian Carcinoma Cells. Laura Rosanò, Marco Varni, Debora Salani, Valeriana Di Castro, Francesca Spinella, Pier Giorgio Natali, and Anna Bagnato.

## Letters to the Editor

- 8347 Correspondence re: J. W. Balsh and R. K. Jain, Fractals and Cancer. *Cancer Res*, 60: 3683-3688, 2000. Hsiao-Wen Chung and Hsiao-Jen Chung.
- 8348 Response to Correspondence from Chung and Chung re: J. W. Balsh and R. K. Jain, Fractals and Cancer. *Cancer Res*, 60: 3683-3688, 2000. J. W. Balsh and R. K. Jain.
- 8351 *TBR-1/64* Polymorphism Is not a Tumor Susceptibility Allele in Macedonian Colorectal Cancer Patients. Correspondence re: R. Pasche *et al.* Type 1 *TBR-1/64* Is a Candidate Tumor Susceptibility Allele. *Cancer Res*, 58: 2727-2732, 1998. Ana-Marija Stefanovska, Georgi D. Efremov, Aleksandar J. Dimovski, Djingis Jasar, Gjorgi Zografski, Tomi Josifovski, Milco Panovski, Renata Jankova, and Mirko Spiroski. Reply: *TBR-1/64* Association with Colorectal Cancer: A New Twist? Boris Pasche, Yatsung Bian, Jennifer Reich, Alfred Rademacher, Pema Kolachana, and Kenneth Offit.

## 8353 Announcements

Future Annual Meetings of the American Association for Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## 8354 Author Index

## Immunology

- 8513 Vaccination of Pediatric Solid Tumor Patients with Tumor Lysate-pulsed Dendritic Cells Can Expand Specific T Cells and Mediate Tumor Regression. James D. Geiger, Raymond J. Hutchinson, Lyndon F. Hohenkirk, Elizabeth A. McKenna, Gregory A. Yanik, John E. Levine, Alfred E. Chang, Thomas M. Braun, and James J. Mulé.

- 8520 A New Mouse Model for Evaluating the Immunotherapy of Human Colorectal Cancer. Heidi Hong, Alberto Waenstein, Li Long, Doron Kahn, Sandeep Soni, Akiva Masuda, Winfried Edelmann, Raju Kuchelapudi, and Howard L. Kaufman.

## Molecular Biology and Genetics

- 8527 Alterations in the *Fragile Histidine Triad (FHT)* Gene in Idiopathic Pulmonary Fibrosis. Kazutsugu Uematsu, Akimasa Yoshimura, Akiko Hongo, Hiroshi Mochimaru, Yoko Hosoya, Shinobu Kunugi, Kuniko Matsuda, Masahito Seike, Futoshi Kurimoto, Kiyoshi Takenaka, Kiyoshi Kozumi, Yuh Fukuda, Shigeo Tanaka, Koei Chin, David M. Jablons, and Shoji Kudoh.
- 8540 Novel Target Genes of the Ah (Dioxin) Receptor: Transcriptional Induction of *N-Mycristoyltransferase 2*. Siva Kumar Kolli, Carolin Balduf, Martin Hofmann, and Martin Göttlicher.
- 8540 Identification and Characterization of Differentially Methylated CpG Islands in Pancreatic Carcinoma. Takashi Ueki, Minoru Toyota, Hal Skinner, Kimberly M. Walter, Charles J. Yeo, Jean-Pierre J. Issa, Ralph H. Hruban, and Michael Goggins.

- 8547 Molecular Analysis of Single Colonies Reveals a Diverse Origin of Initial Clonal Proliferation in B-Precurator Acute Lymphoblastic Leukemia that Can Precede the t(12;21) Translocation. Victoria J. Weston, Carmel M. McConville, Jillian R. Mann, Philip J. Darbyshire, Sarah Lawson, John Gordon, Paul A. H. Moss, A. Malcolm R. Taylor, and Tarjanta Stankovic.

- 8554 Replication Protein A2 Phosphorylation after DNA Damage by the Coordinated Action of Ataxia Telangiectasia-Mutated and DNA-dependent Protein Kinase. Hongyan Wang, Jun Guan, Huichen Wang, Ange Ronel Feraul, Ya Wang, and George Iliakis.

- 8564 Transient Expression of Cyclin D1 Is Sufficient to Promote Hepatocyte Replication and Liver Growth in Vivo. Christopher J. Nelson, David G. Rickheim, Nikolai A. Timchenko, Michael W. Stanley, and Jeffrey H. Albrecht.

## Tumor Biology

- 8569 Vascular Endothelial Growth Factor Isoforms Display Distinct Activities in Promoting Tumor Angiogenesis at Different Anatomic Sites. Ping Guo, Li Xu, Shi Pan, Rolf A. Brecken, Shu-Ting Yang, G. Brian Whitaker, Motoo Nagane, Philip E. Thorpe, Jan S. Rosenbaum, H.-J. Su Huang, Webster K. Cavener, and Shi-Yuan Cheng.

- 8578 Differential Expression of Manganese Superoxide Dismutase and Catalase in Lung Cancer. James Chung-man Ho, Shao Zheng, Suiy A. A. Comhair, Carol Farver, and Serpil C. Erzurum.

- 8586 Interference of Tenascin-C with Syndecan-4 Binding to Fibronectin Blocks Cell Adhesion and Stimulates Tumor Cell Proliferation. Wentao Huang, Ruth Chiquet-Ehrismann, José V. Moyano, Angeles Garcia-Pardo, and Gertraud Orend.

## Letters to the Editor

- 8595 Correspondence re: F. Coulet *et al.* Detection of Plasma Tumor DNA in Head and Neck Squamous Cell Carcinoma by Microsatellite Typing and p53 Mutation Analysis. *Cancer Res*, 60: 707-709, 2000. Jose M. Silva and Felix Bonilla. Reply: Héléne Blons, Florence Coulet, and Pierre Laurent-Puig.

## 8597 Announcements

Future Annual Meetings of the American Association for Cancer Research  
AACR Special Conferences in Cancer Research  
Recent Deaths  
Calendar of Events

## 8599 Author Index



## Review

- 8601 **Insulin-like Growth Factor-binding Protein 2 in Tumorigenesis: Protector or Promoter?** Andreas Hoefflich, Raquel Reisinger, Harald Lahn, Wieland Kiess, Werner F. Blum, Helmut J. Kolb, Matthias M. Weber, and Eckhard Wolf.

## Advances in Brief

- 8611 **Reversal of *GSTP1* CpG Island Hypermethylation and Reactivation of  $\alpha$ -Class Glutathione S-Transferase (*GSTP1*) Expression in Human Prostate Cancer Cells by Treatment with Proscaramide** Xiaohui Lin, Kekule Asgari, Mathew J. Putzi, Wesley R. Gage, Xiang Yu, Brian S. Comblatt, Arunima Kumar, Steven Plantadosi, Theodore L. DeWeese, Angelo M. De Marzo, and William G. Nelson.
- 8617 **Cyclooxygenase-2 Is Up-Regulated in Proliferative Inflammatory Atrophy of the Prostate, but not in Prostate Carcinoma** Shan Zhu, Wesley R. Gage, Jurga Sauvaaget, Elizabeth A. Saris, Mathew J. Putzi, Charles M. Ewing, Dennis A. Faith, William G. Nelson, Angelo M. De Marzo, and William B. Isaacs.
- 8624 **Gastrointestinal Stromal Tumors with *KIT* Mutations Exhibit a Remarkably Homogeneous Gene Expression Profile** Susanne V. Allander, Nina N. Nuppenom, Markus Ringel, Gábor Hostetter, Greg W. Maher, Natalie Gollubger, Yidong Chen, John Carpten, Abdel G. Elkaboun, and Paul S. Meltzer.
- 8629 **A Receptor for Vascular Endothelial Growth Factor That Stimulates Endothelial Apoptosis** Timothy P. Quinn, Scott J. Softer, Kevin Ramer, Lewis T. Williams, and Mary C. Nakamura.
- 8638 **Boron Neutron Capture Therapy for the Treatment of Oral Cancer in the Hamster Cheek Pouch Model** Erica L. Kreiman, Maria E. Itoiz, Juan Longhino, Herman Blumstein, Osvaldo Calzetta, and Amanda E. Schwint.
- 8643 **Depletion of CD25<sup>+</sup> CD4<sup>+</sup> T Cells and Treatment with Tyrosinase-related Protein 2-transfected Dendritic Cells Enhance the Interferon  $\alpha$ -induced, CD8<sup>+</sup> T-Cell-dependent Immune Defense of B16 Melanoma** Julia Steitz, Jürgen Brück, Julia Lenz, Jürgen Knop, and Thomas Tuting.
- 8647 **Immune Escape of Melanoma: First Evidence of Structural Alterations in Two Distinct Components of the MHC Class I Antigen Processing Pathway** Barbara Seliger, Ulrike Ritz, Rupert Abela, Michael Böck, Robert Tämpé, Gert Sutter, Ingo Dresler, Christoph Huber, and Soldano Ferrone.
- 8651 **Loss of Heterozygosity of the Putative Prostate Cancer Susceptibility Gene *HPIC2/ELAC2* Is Uncommon in Sporadic and Familial Prostate Cancer** Yu-Qin Wu, Hong Chen, Mark A. Rubin, Kirk J. Wojno, and Kathleen A. Cooney.
- 8654 **A Xeroderma Pigmentosum Group D Gene Polymorphism Predicts Clinical Outcome to Platinum-based Chemotherapy in Patients with Advanced Colorectal Cancer** David J. Park, Jan Stoehlmacher, Wu Zhang, Denise D. Tsao-Wei, Susan Groshen, and Heinz-Josef Lenz.
- 8659 **Aberrant Promoter Methylation Profile of Bladder Cancer and Its Relationship to Clinicopathological Features** Riechiro Maruyama, Shunichi Toyooka, Kiyomi O. Toyooka, Kenichi Harada, Arvid K. Virmani, Sabine Zechbauer-Müller, Alfredo J. Farnas, Funda Vakar-Lopez, John D. Minna, Arthur Sagalowsky, Bogdan Muta, and Adi F. Gazdar.
- 8664 **Evidence That APC Regulates Survivin Expression: A Possible Mechanism Contributing to the Stem Cell Origin of Colon Cancer** Tao Zhang, Tomas Olovren, Zhenjiang Gao, Zhiping Gao, Sandra M. Ehrlich, Jeremy Z. Fields, and Bruce M. Boman.

## Regular Articles

## Biochemistry and Biophysics

- 8668 **Kinase Suppressor of Ras Determines Survival of Intestinal Epithelial Cells Exposed to Tumor Necrosis Factor** Fang Yan, Sutha K. John, and D. Brent Polk.
- 8676 **Platrotrophic Inhibition of Pericellular Urokinase-type Plasminogen Activator System by Endogenous Tumor Suppressive Maspin** Hector Biliran, Jr., and Shijie Sheng.

## Carcinogenesis

- 8683 **LAS, a Novel Selective Estrogen Receptor Modulator with Chemopreventive and Therapeutic Activity in the N-Nitroso-N-methylurea-induced Rat Mammary Tumor Model** Leonard A. Cohen, Brian Pittman, Chang-Xiu Wang, César Aliaga, Li Yu, and James D. Moyer.
- 8689 **Intestinal Tumorigenesis in Multiple Intestinal Neoplasia Mice Induced by the Food Mutagen 2-Amino-1-methyl-6-phenylimidazo[4,5-b]pyridine: Perinatal Susceptibility, Regional Variation, and Correlation with DNA Adducts** Inger-Lise Steffensen, Herman A. J. Schut, Jan Erik Poulsen, Ashild Andreassen, and Jan Alexander.

## Clinical Investigations

- 8697 **Normalization of Elevated Hepatic 8-Hydroxy-2'-Deoxyguanosine Levels in Chronic Hepatitis C Patients by Phlebotomy and Low Iron Diet** Junji Kato, Masayoshi Kobune, Tokiko Nakamura, Ganji Kuroiwa, Kohichi Takada, Rishu Takimoto, Yasuhiro Sato, Koshi Fujikawa, Minoru Takahashi, Tetsuji Takayama, Tatsuhiro Ikeda, and Yoshino Niitsu.

## Endocrinology

- 8703 **Synergistic Cytotoxicity Exhibited by Combination Treatment of Selective Retinoid Ligands with Taxol (Paclitaxel)** Valérie Vivat-Hannah, Dan Yoo, Cheryl Rizzo, Jean-Paul Daris, Philippe Lapointe, F. Christopher Zusi, Anne Marinier, Matthew V. Lorenzi, and Marco M. Gottrids.
- 8712 **Glucocorticoids<sup>+</sup> Inhibit Androgenic Activity in a Cell Line Derived from a Metastatic Prostate Cancer** Ching-Yi Chang, Philip J. Walther, and Donald P. McDonnell.

## Epidemiology and Prevention

- 8718 **Differential Association of the Codon 72p53 and *GSTM1* Polymorphisms on Histological Subtype of Non-Small Cell Lung Carcinoma** Geoffrey Liu, David P. Miller, Wei Zhou, Sally W. Thurston, Rong Fan, Li-Lian Xu, Thomas J. Lynch, John C. Wain, Li Si, and David C. Christiani.

## Experimental Therapeutics

- 8723 **Interaction of p53 and DNA-PK in Response to Nucleoside Analogues: Potential Role As a Sensor Complex for DNA Damage** Geetha Achanta, Helene Pelicano, Li Feng, William Plunkett, and Feng Huang.
- 8730 **Simultaneous Inhibition of Glioma Angiogenesis, Cell Proliferation, and Invasion by a Naturally Occurring Fragment of Human Metalloproteinase-2** Loretta Bello, Valeria Lucini, Giorgio Carabba, Carlo Guasanti, Marcelle Machif, Mauro Fladri, Demetrios Nikas, Jianping Zhang, Guisano Tomei, Roberto M. Villani, Rona S. Carroll, Andreas Balfaki, and Peter M. Black.
- 8737 **Human Angiogenesis Fused to Human CD30 Ligand (Ang-CD30L) Exhibits Specific Cytotoxicity against CD30-positive Lymphoma** Michael Hahn, Stephanie Sasse, Mehmet K. Tur, Bärbel Matthay, Timo Schinköthe, Susanna M. Rybak, Stefan Barth, and Andreas Engel.
- 8743 **Treatment of Malignant Gliomas with a Replicating Adenoviral Vector Expressing Simplex Virus-Thymidine Kinase** Dharmin Nanda, Ronald Vogels, Menzo Havenga, Cees J. Avezaat, Abraham Bout, and Peter Selivis Smith.
- 8751 **Systemic Cancer Therapy with a Tumor-selective Vaccinia Virus Mutant Lacking Thymidine Kinase and Vaccinia Growth Factor Genes** J. Andrea McCart, Jerrold M. Ward, John Lee, Yun Hu, H. Richard Alexander, Steven K. Libutti, Bernard Moss, and David L. Bartlett.
- 8758 **Evaluation of Farnesyl:Protein Transferase and Geranylgeranyl:Protein Transferase Inhibitor Combinations in Preclinical Models** Robert B. Lobell, Charles A. Omer, Marc T. Abrams, Hema G. Bhinnahwal, Mary Jo Bracker, Carolyn A. Boer, Joseph P. Davide, S. Jane deSolms, Christopher J. Dinmore, Michelle S. Ellis-Hutchings, Astrid M. Kral, Dongming Liu, William C. Lumma, Samuel V. Moschko, Elaine Rands, Theresa M. Williams, Samuel L. Graham, George D. Hartman, Allen I. Offit, David C. Hennebrook, and Nancy E. Kohl.
- 8769 **Induction of Immunity in Pericardial Tissues Combined with Intracerebral Transplantation of Interleukin-2-producing Cells Eliminates Established Brain Tumors** Yasuo Iwadate, Akira Yamaura, Yasuo Sato, Shigeru Sakayama, and Masatoshi Tagawa.
- 8775 **The Hamster Cheek Pouch as a Model of Oral Cancer for Boron Neutron Capture Therapy Studies: Selective Delivery of Boron by Boromophenylalanine** Erica L. Kreiman, Maria E. Itoiz, Alexandra Dagnosa, Ricardo Garavaglia, Silvia Farías, Daniel Buitoni, and Amanda E. Schwint.
- 8782  **$\alpha$ -Fetoprotein-specific Tumor Immunity Induced by Plasmid Prime-Adenovirus Boost Genetic Vaccination** Wilson S. Meng, Lisa H. Butterfield, Antoni Ribas, Vivian B. Dissette, Justin B. Heller, Gustavo A. Miranda, John A. Glaspy, William H. McBride, and James S. Economou.

## Immunology

- 8787 **CD40 Cross-Linking Bypasses the Absolute Requirement for CD4 T Cells during Immunization with Melanoma Antigen Gene-modified Dendritic Cells** Antoni Ribas, Lisa H. Butterfield, Saral N. Amarnani, Vivian B. Dissette, Donald Kim, Wilson S. Meng, Gustavo A. Miranda, He-Jing Wang, William H. McBride, John A. Glaspy, and James S. Economou.
- 8794 **The Dynamics of the T-Cell Antitumor Response: Chemokine-secreting Dendritic Cells Can Prime Tumor-reactive T Cells Extrinsically** Christopher J. Kirk, Dennis Hartigan-O'Connor, and James J. Muller.

## Molecular and Genetics

- 8803 **Expression of Id Helix-Loop-Helix Proteins in Colorectal Adenocarcinoma Correlates with p53 Expression and Mitotic Index** James W. Wilson, Richard W. Reed, Toshiaki Inoue, Mamiela Balci, Aldo Boccini, Paola Faraoni, Christopher S. Potten, and John D. Norton.
- 8811 **Regulation of Cyclin D1 and p16INK4A Is Critical for Growth Arrest during Mammary Invololution** Michele Gadd, Carmen Pise, John Branda, Viviana Jonescu-Tiba, Zeljko Nikolic, Chuanwei Wang, Timothy Wang, Gregory M. Shackelford, Robert D. Cardiff, and Emmett V. Schmidt.
- 8820 **The FOXP1 Winged Helix Transcription Factor Is a Novel Candidate Tumor Suppressor Gene on Chromosome 3p** Allison H. Banham, Nigel Beasley, Elias Campos, Pedro L. Fernandez, Carrie Fidler, Kevin Gatter, Margaret Jones, David Y. Mason, John E. Prime, Philippe Trougouloff, Katrina Wood, and Jacqueline L. Cordell.
- 8830 **Overexpression of p21<sup>WAF1/CIP1</sup> Is an Early Event in the Development of Pancreatic Intraepithelial Neoplasia** Andrew V. Biankin, James G. Kench, Adrienne L. Morey, C.-Soon Lee, Sandra A. Biankin, Darren R. Head, Thomas B. Hugh, Susan M. Henshall, and Robert L. Sutherland.

- 8838 **Derivation of Human Tumor Cells in Vitro without Widespread Genomic Instability** Drazen Zimonjic, Mary W. Brooks, Nicholas Popescu, Robert A. Weinberg, and William C. Hahn.
- 8845 **Detection of Occult Metastatic Breast Cancer Cells in Blood by a Multimeric Marker Assay: Correlation with Clinical Stage of Disease** Bret Taback, Arden D. Chan, Christine T. Kuo, Peter J. Bostick, He-Jing Wang, Armando E. Giuliano, and Dave S. B. Hoon.
- 8851 **Autocrine Production of Interleukin 6 Causes Multidrug Resistance in Breast Cancer Cells** Dietrich Conze, Linda Weiss, Patricia Susan Regan, Alok Bhushan, Donald Weaver, Peter Johnson, and Mercedes Rincón.
- 8859 **The Role of Tumor Necrosis Factor Signaling Pathways in the Response of Murine Brain to Irradiation** Jennifer L. Daigle, Ji-Hong Hong, Chi-Shiun Chung, and William H. McBride.
- 8866 **Predisposition to Efficient Mammary Tumor Metastatic Progression Is Linked to the Breast Cancer Metastasis Suppressor Gene *Brs1*** J. Kent W. Hunter, Karl W. Broman, Thomas Le Voyer, Luane Lukes, Diana Corza, Michael T. Debes, Jessica Rouse, and Danny R. Welch.

## Tumor Biology

- 8873 **Novel Transmembrane GTPase of Non-Small Cell Lung Cancer Identified by mRNA Differential Display** Jing-Gang Cheng, Kun-Tu Yeh, Shih-Lu Wu, Nan-Yung Hsu, Guang-Wei Chen, Yea-Wen Yeh, and Heng-Chen Ho.
- 8880 **Deleted in Malignant Brain Tumors 1 Is a Versatile Mucin-like Molecule Likely to Play a Differential Role in Diagnostic Tumor Cancer** Jun Möllenhauer, Stephan Herberich, Burkhard Heintze, Gaby Kollender, Inge Krebs, Jens Madsen, Ulffe Holmskov, Karin Sorger, Liene Schmitt, Stefan Wiemann, Herwart F. Otto, Hermann-Josef Gröne, and Annemarie Pouska.
- 8887 **Epidermal Growth Factor Receptor (HER1) Tyrosine Kinase Inhibitor ZD1839 (Iressa) Inhibits HER2/neu (*erbB2*)-overexpressing Breast Cancer Cells in Vitro and in Vivo** Stacy L. Moulder, F. Michael Yakes, Senthil K. Muthusamy, Roberto Bianco, Jean F. Simpson, and Carlos L. Arteaga.
- 8896 **Suppression of Membrane-type 1 Matrix Metalloproteinase (MMP)-mediated MMP-2 Activation and Tumor Invasion by Testican 3 and Its Splicing Variant Gene Product, N-Tes** Mitsutoshi Nakada, Akio Yamada, Takahisa Takino, Hisashi Miyamoto, Tomoya Takahashi, Junko Yamashita, and Hiroshi Sato.
- 8903 **Acute (Cyclic) Hypoxia Enhances Spontaneous Metastasis of KHT Murine Tumors** Rob A. Cairns, Tuala Kalliomäki, and Richard P. Hill.
- 8909 **The Chimeric Protein Tyrosine Kinase ETV6-NTRK3 Requires both Ras-Erk1/2 and PI3-Kinase-Akt Signaling for Fibroblast Transformation** Cristina Tognon, Mathew Garnett, Elizabeth Kenward, R. Kay, Kevin Morrison, and Paul H. B. Sorensen.
- 8917 **Elevated Levels of Connective Tissue Growth Factor, WISP-1, and CYR61 in Primary Breast Cancers Associated with More Advanced Features** Dong Xie, Kei Nakachi, Henning Wang, Robert Elashoff, and H. Philip Koeffler.
- 8924 **Carbonic Anhydrase 9 as an Endogenous Marker for Hypoxic Cells in Cervical Cancer** Peggy L. Olive, Christina Aquino-Parsons, Susan H. MacPhail, Shu-Yuan Lian, James A. Raleigh, Michael J. Lerman, and Eric J. Stanbridge.

## In Memoriam

- 8930 **Sidney Weinhouse** Gerald Litwack, Renato Baserga, and Margaret Foti.
- 8930 **Pietro M. Gullino** Rakesh K. Jain.
- 8931 **Thomas S. Argyris** Leonard Augenlicht.

## 9932 Announcements

Future Annual Meetings of the American Association for Cancer Research  
AACR Special Conferences in Cancer Research  
Calendar of Events

## 9933 Acknowledgment to Reviewers

## 9940 Author Index

## 9942 2001 Author Index

## 9970 2001 Subject Index

## 9015 2001 Volume Contents

## 9038 2001 Cover Illustrations